Destructivity: a Political Economy of Military Effectiveness in Conventional Combat

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Dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Political Science in the Graduate School at Duke University

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Neither technological nor numerical superiority accounts for the outcome of most battles. Instead, some intangible factor has historically mattered more. The political science literature has termed this factor ‘military effectiveness’, yet using this phrase to refer solely to efficiency in one of the many tasks militaries are asked to perform can be dangerous. Armies which are good at conventional combat may be less effective at internal security, for instance. I therefore propose a new term ‘destructivity’ to refer exclusively to military effectiveness in high intensity, conventional warfare.

Previous literature has suggested a number of factors which may account for variation between states in their levels of destructivity. Wealth, human capital, regime type, ethnic heterogeneity, culture and the external pressures of the international system have all been suggested by past scholars. Quantitative literature has uncovered many broad level correlations which could map onto numerous plausible causal mechanisms, while the qualitative literature has pointed to numerous theories which have remained untested outside the small number of cases which motivated them.

My dissertation puts forward a unified theory of destructivity based on the recognition that armies are not unitary actors but must be understood in light of the motivations and interactions of the individual officers and men which comprise them. Borrowing a concept from organizational economics, I suggest that an Army is a large scale ‘rank order tournament’ in which individuals enter in the hope of advancement through mastering military skills and performing well in battle. The broader the funnel of entry into these tournaments, the stiffer is competition for advancement and hence the higher the Army’s level of skill. It follows from this
that whatever restricts entry into the tournament – low literacy, politically motivated restrictions from coup vulnerable leaders and poor prospects for post service employment – reduces destructivity.

Motivating troops to fight is a complex undertaking. The broader goals of the war by themselves are insufficient as any given soldier’s marginal contribution to the outcome of the war is minute. Regrettable though it is to concede, harsh negative punishments such as the death penalty can be effective in deterring the most obvious and observable forms of military shirking. In situations where soldiers’ actions are hard to observe, however, negative sanctions are less effective. Here, the concept of peer monitoring, taken from microfinance, is more important – soldiers are deterred from shirking by the prospect of censure from other members of their small groups.

I first test my theory on a dataset of battles taken from Biddle and Long, Pilster and Boehmelt and Clodfelter. I then proceed to use four case studies to illustrate my causal mechanisms. Using original archival material and interviews with retired Iraqi military personnel, I show how both low literacy and coup proofing undermined Iraq’s destructivity relative to the United States. I then examine the British and German cases to answer the question – what happens when two states of equal literacy, with no history of coups, fight one another? I suggest that market structure, by affecting the relative opportunities for military recruits inside and outside the service, is the key factor in providing a marginal advantage to one side relative to the other.
Dedication

I would like to dedicate this work to all of the young men and women of all nationalities who laid down their lives in the conflicts described here, especially my mother’s uncle, Private Samuel McVeigh Laird, 1st Battalion, Argyll and Sutherland Highlanders, who was killed on the Western Front in 1917, at the age of 19. Who knows what he or any of the others who fell could have achieved if they had been allowed to live.
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1. Introduction

GENERAL, YOUR TANK IS A POWERFUL VEHICLE
It smashes down forests and crushes a hundred men.
But it has one defect:
It needs a driver.

General, your bomber is powerful.
It flies faster than a storm and carries more than an elephant.
But it has one defect:
It needs a mechanic.

General, man is very useful.
He can fly and he can kill.
But he has one defect:
He can think.

Bertold Brecht

In the chilly winter of 1939, the combined Allied forces facing Hitler’s Wehrmacht along the Maginot line had every reason to expect a protracted conflict from which they stood a reasonable chance of emerging victorious. By the end of September 1939, the French and Poles alone fielded the equivalent of 130 divisions against a German strength of 98 divisions (Liddell Hart 1999). Contrary to post-war mythology, moreover, not only did the French field more tanks than the Germans (Liddell Hart 1999), the tanks they did field were by common consent more technologically advanced- the French Char B was greatly feared by the Germans, while the standard German Mark III Panzer was thought small and lightly armored (Tooze 2006). Only a few days before the outbreak of the war, Winston Churchill noted the apparent balance of capabilities between the French and German Armies and commented to French Chief of Staff General Georges – “You are the masters” (Liddell Hart 1999).
Hundreds of miles to the north, the forces of the Soviet tyrant Joseph Stalin massed on the border and launched an unprovoked invasion of their tiny, democratic Finnish neighbor. Expecting a walkover, Soviet commander Kiril Meretskov publicly stated that Finland would fall in two weeks. Soviet officers counseled their troops against advancing so far that they might enter Swedish territory by mistake. Outnumbering the Finnish Army by as much as two to one locally, and backed up by a state many times Finland’s size, such confidence would have seemed entirely merited at the time (Trotter 1991).

The predictions of both Churchill and Stalin’s Marshalls—well founded though they appeared at the time—were to be thoroughly confounded.

Famously, the course of the forthcoming Battle of France gave the lie both to expert judgments and objective indicators of the balance of power. On May 10th, 1940, the German Army smashed through the French defenses on the Western Front and had, a mere six weeks later, compelled France to surrender and forced the British Army out of the continent, capturing or killing millions of Allied soldiers in the process and condemning the peoples of Western Europe to four years of brutally oppressive occupation (Liddell Hart 1999).

In the north, the Finnish Army time and again had outclassed the Soviet invaders. The Finns won decisive victories against the Red Army in numerous pitched battles along the Mannerheim line, and inflicted severe losses on Soviet troops through innovative attacks by ski mounted troops on Soviet columns, using a new weapon of a glass bottle filled with petrol and set alight, which the Finns christened the ‘Molotov cocktail’ (Trotter 1991).
27 years later, a survivor of Hitler’s war machine – a German born Israeli Jew by the name of Colonel Uri Ben Ari, now the commander of a mechanized brigade of the Israeli Defense Force – was tasked with capturing three Jordanian positions commanding the approaches to Jerusalem. Basing his plan, in a historical irony, on his reading of the tactics of the Wehrmacht’s General Heinz Guderian, Colonel Ben Ari split his attacking force into four separate formations, attacking the position from four sides. His audacious and successful plan secured Jerusalem against any further Jordanian counterattacks and placed the entire city under Israeli control, where it remains to this day (Bowen 2005). In the city itself, even lower levels of the Israeli Army were wreaking havoc with the Jordanians – one Corporal Zerach Epstein, for instance, killed a total of nine Jordanians single handedly in one individual attack (Bowen 2005). Such superb lower level initiative and leadership throughout the ranks of the Israeli Defense Force allowed Israel to emerge from the Six Day War victorious, even though the Arab states facing them together fielded over twice the manpower of the Israelis, three times the aircraft and four times the number of tanks (Bowen 2005). Although the Arab states devoted a great deal of time and attention to improving their military forces in order to extract revenge for the Six Day War, the Israelis once again emerged with another emphatic triumph against the same enemies in the Yom Kippur War of 1973 (Allen 1982) and the Bekaa Valley encounter with Syria in 1982, again fighting against numerically superior forces whom the Soviets had provided with the latest in military technology (Schiff and Ya’ari 1984).

The same year as Bekaa, but in a location almost as far removed from it as possible, elements of the British Parachute Regiment were ordered to assault the Argentinian positions at Goose Green in the Falkland Islands. The practical difficulties of air operations so far from any British bases meant that British forces had been fighting against Argentinian air superiority.
Mounting British naval losses had influenced Prime Minister Margaret Thatcher to press her commanders for a ground offensive in order to ‘regain momentum’ and demonstrate to the British public that the Falklands mission was bound for success. The Paras were therefore compelled to mount an offensive operation against a position which he had originally intended to bypass, facing an Argentinian force which outnumbered them 5:3. Technologically speaking, the British and Argentine forces were fairly evenly matched, and the terrain made the use of armored vehicles impractical, so the battle was a predominantly infantry engagement which would not have seemed out of place seventy years earlier in the trenches of Flanders. Again, neither numbers nor technology proved decisive as the well trained and led British troops overwhelmed the Argentinian defenders in stiff hand-to-hand combat (Freedman 1988).

What connects these four conflicts?

They are very good examples (though as we shall see, history affords many more) of a fact which has been well known to military leaders and thinkers for centuries - many armies have some apparently intangible factor which can allow them to defeat opponents many times their size. Voltaire wrote that God is not on the side of the big battalions, but of the best shots (Voltaire 1952). Generalizing this insight, one can say with confidence that wars are not won by the big battalions because soldiers from different armies are very rarely of equal military value. As Stephen Biddle’s research has shown, raw indicators of power are very poor predictors of who actually emerges victorious in conventional war (Biddle 2004). One Finnish soldier was worth more than one Soviet soldier, one German worth more than one Frenchman, one Israeli soldier worth more than one Egyptian soldier and one British soldier more than one Argentinian soldier.
Political scientists have termed this phenomenon ‘military effectiveness’. Yet the use of the term military effectiveness to refer to efficiency in conventional combat is imprecise and misleading. Militaries are called to perform a variety of functions besides conventional warfare, such as counterinsurgency and peacekeeping. Tactics, and for that matter, armies, which are effective in performing one task may not be good for another (Nagl 2002; Lyall and Wilson 2010).

By analogy with the concept of ‘productivity’ in economics, I therefore propose a new term for military effectiveness in conventional combat – ‘destructivity’. Productivity in economics refers to the value which a given worker can produce with the inputs of raw materials and capital equipment he or she is given. Similarly, destructivity refers to the amount of destructive power a given soldier can inflict on his enemy with his inputs of military technology.

Conflicts between states of roughly equal size will almost certainly be won by the side with the higher level of destructivity. States can also win against adversaries far larger than they are if their advantage in destructivity is big enough – as the history of Israel demonstrates. Even if states with an advantage in destructivity are eventually overwhelmed by the sheer size of their opponents, as Finland was, they can still inflict substantial losses and gain significant concessions at the negotiating table, as Finland did, or conquer large tracts of territory, having an enormous impact on the lives of those living there, as Germany did in World War Two.

Understanding the sources of ‘destructivity’ is therefore a very important undertaking in political science. This is the task which this dissertation is intended to accomplish.
Previous literature, as we shall see below, has still not conclusively established the determinants of ‘destructivity’. Many factors have been proposed, including regime type (Reiter 2002), wealth (Beckley 2010), the competitive pressures of the international system (Desch 2008), human capital (Biddle and Long 2006), civil military relations (Pilster and Boehmelt 2011), ethnic fragmentation (Rosen 1996; Henderson 1985; Hoyt 2007), and culture (Castillo 2012). Some theories have been developed and tested with reference only to one or two well-known cases, leaving the analyst unsure whether the case or cases in question represent more than outliers. The quantitative literature, by contrast, has produced some broad scale correlations with a number of suggestive mechanisms proposed to account for them. Stephen Biddle’s concept of the ‘modern system’ has been highly influential (Pilster and Boehmelt 2011; Lyall and Wilson 2010). This suggests that a number of elements such as dispersion, use of cover, independent small unit maneuver, concentration of forces at the decisive point and elastic defense are key elements of destructivity (Biddle 2004). But what in turn explains the successful adoption of this system is, as Biddle himself notes, an open question.

Here the objection may be raised – interesting though this question may be, is it of antiquarian interest only? Are we not heading towards a future in which conflict will increasingly be with or between networks of non-state actors such as terrorists, insurgents, pirates or drugs gangs? In the recent past, fighting counterinsurgency operations (COIN) has dominated the thinking of most Western Armies. In light of this, why should we continue to study the determinants of conventional military effectiveness?

1.1 Why we should continue to study the blackest of swans
My dissertation intends to determine the key causes of military effectiveness in conventional war. By conventional war, I mean armed conflict between hierarchically organized, trained men over defined territory. This definition maps only imperfectly onto Correlates of War’s categorizations of ‘inter-state’, ‘extra-state’, ‘non-state’ and ‘intra-state’ wars (Sarkees and Wayman 2006). Stephen Biddle claims that conflicts are better conceptualized on a spectrum ranging from the most conventional (the ‘Maginot Line’) to the least conventional (‘the Viet Cong’) (Biddle and Friedman 2008). A large number of non-interstate conflicts in fact fall relatively highly on the conventional end of the scale and so do indeed fall within the scope of my work – for instance the war between Croatia and the Serb enclave of Krajina in 1994, the resistance of Chechen separatists to the Russians in Grozny in 1994-1995, the recapture of Rwanda by the Rwandan Popular Front under Paul Kagame or the fighting between Israel and Hezbollah in 2006 (Biddle and Friedman 2008). Stathis Kalyvas prefers a qualitative distinction between types of non-interstate war – in his terminology, my theory should apply to ‘conventional non-state wars’, such as the Spanish Civil War, as well as conventional inter-state wars (Kalyvas 2009). On the whole, however, the scope of this dissertation covers the mostly conventional end of the scale and as such is primarily weighted towards inter-state wars as defined by CoW.

As social scientists, we know that the importance of a given phenomenon is the product of its probability or frequency and also its impact. Questions which political scientists study range from moderate impact, high probability events such as trade negotiations, foreign aid or FDI flows to very high impact but low probability events such as nuclear war. Nuclear weapons have only been used in one war, and nuclear proliferation has occurred on only nine occasions in
Yet the huge impact which nuclear weapons could potentially have justifiably means that the subject receives attention in the discipline which it would not warrant on the basis of frequency alone.

Conventional war falls somewhere further along the spectrum than nuclear war in terms of both impact and frequency. Yet compared to other types of war it unquestionably falls into the high impact-low frequency category. As it is waged, by definition, by states which mostly surpass non state actors in terms of numerical and material resources with which to do each other harm, this is scarcely surprising. Although inter-state conflict accounts for less than 15% of the total number of wars recorded by CoW since 1815, it accounts for over 79% of total fatalities. The mean lethality of an interstate war, as recorded by CoW, is far greater than that of any of the other types of war. The average interstate war results in over 100,000 fatalities per combatant, more than six times the corresponding number for intra-state wars and more than ten times the mean number of fatalities for extra- and non-state wars (Sarkees and Wayman 2006). Britain, for instance, is famed for having fought an unusually large number of unconventional, ‘brushfire’ wars. Yet all the casualties suffered in intra, extra and non-state wars in the Twentieth Century combined are still smaller than those the British Army incurred on the first day of the Battle of the Somme in World War One (Middlebrook 1971; Sarkees and Wayman 2006). The fraction of total fatalities in the CoW dataset taken up by interstate and other types of war is displayed below (Sarkees and Wayman 2006):

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Figure 1: Proportion of fatalities by conflict type

Nor is the impact of conventional war limited to the number of deaths it causes. World War One resulted in the overthrow of no fewer than four empires with populations of tens of millions of people (Churchill 1931). It more or less set the boundaries of the modern day Middle East and Balkans (Fromkin 1989). It resulted both in the rise of communism (Churchill 1931; Stone 1975) and the entrance of the United States onto the world stage (Ferguson 2004). Quite apart from the human costs, the financial burdens of the war accounted for over half of both France and Germany’s pre-war national incomes (Broadberry and Harrison 2005). The final settlement imposed on Germany, by contrast, laid the groundwork for the economic turbulence of the Great Depression (Burg 2005) and the rise to power of the Nazis (Taylor 1961).
In World War Two, German military efficiency resulted in the occupation of most of continental Europe by the Nazis. As well as giving Hitler access to the millions of Jews who were to perish in the Holocaust, this also resulted in brutal treatment even of the non-Jewish subject populations of Europe. For instance, Adam Tooze calculates the total number of gentile slave laborers from Eastern Europe worked and starved to death by the Nazis at between 2.4 and 7 million, depending on whether one includes Soviet PoWs in the total (Tooze 2006). In the Far East, Japanese fighting power resulted in the conquest of much of China and South East Asia. The brutality of Japanese rule in these areas can be seen in the civilian death toll in China alone – over 19 million according to the historian Iris Chang (Chang 1997). At the same time, the humiliating defeats of Western colonial powers such as Britain and the Netherlands at the hands of the Japanese spurred rapid decolonization in East Asia after the war (Spruyt 2005).

The liberation of Western Europe by the Americans and British led to decades of stable, democratic governance on the continent and the creation of a global political and economic institutional infrastructure which still largely survives today (Ikenberry 2001). For the less fortunate inhabitants of Eastern Europe, the fact that their deliverance came at the hands of the Red Army condemned them to over forty years of oppressive and economically inefficient communist rule (Liberman 1996).

Economically, World War Two had a colossal impact. The most up to date estimates of the financial destruction wrought by the war run up to $4,000 billion, over five times the costs of World War One (Royde-Smith 2007). Approximately 40% of the built up areas of Germany and Japan, 30% of those of Britain and Poland and 20% of France, Belgium and the Netherlands were
destroyed. 21,000,000 refugees were created. For France alone, the costs of reconstruction were estimated at three times France’s pre-war income (Royde-Smith 2007).

Nor is the impact of conventional war limited to the two world wars. The conventional victories of the Israeli Defense Force against the Arab powers have had a huge influence of the politics of the Middle East for the past six decades. The inability of Arab monarchist or nationalist regimes to match Israeli fighting power has been cited by many analysts as a key factor behind the rise of political Islam (Bowen 2005). The Indo-Pakistani wars spurred nuclear proliferation in South Asia and Indian military power led directly to the creation of an entirely new nation - Bangladesh, one of the world’s most populous countries (Sisson 1990). The enormous financial losses which Iraq incurred as a result of its failure to win a quick victory against Iran in the 1980s led directly to the invasion of Kuwait (al-Marashi and Salama 2008), which in turn of course led to the stationing of US ground forces in the Muslim Holy Land and so arguably helped contribute to the events of 9/11 (Pape 2005).

The enormous intrinsic human, political and economic impact of interstate war therefore makes it imperative that we continue to investigate the determinants of conventional military power.

Inter-state wars have been declining relative to other types of armed conflict in recent years. Below I outline a graph of the frequency of both inter- and intra-state wars by decade since the beginning of the CoW dataset in 1815 (Sarkees and Wayman 2006). I also outline a similar graph for inter-state wars as a proportion of all conflicts over the same time period (Sarkees and Wayman 2006).
Figure 2: Total number of interstate wars by decade since 1815
This does indeed show that inter-state wars have been losing ground to intra-state conflicts over the past few decades, both in absolute terms and as a proportion of all wars. Nonetheless, as should be apparent from the graphs, there have been decades in the past with fewer conventional wars than our own, decades where conventional wars made up a smaller proportion of all armed conflicts and steeper drop-offs in the incidence of inter-state wars. Interstate war has, in fact, always made up a minority of armed conflicts. This much is not new. Moreover, to extrapolate from the current trends that conventional war is doomed and that all future conflicts will be COIN would be over hasty, for a number of reasons.
For one, simply projecting the immediate past into the future can make for very faulty predictions. In fact, this tendency may reflect a well-known and potentially dangerous cognitive bias - the availability heuristic. Individuals, it has been shown, have a tendency to overestimate the probability of phenomena which are particularly salient to them or which they personally have lived through (Kahnemann and Tversky 1974). Whilst understandable, this heuristic can be damaging when it causes people to assume that a given malignant phenomenon has disappeared simply because it has not been present for some time. Consider the following description of popular reaction to the appointment of Ben Bernanke, a specialist in the Great Depression, as Chairman of the Federal Reserve.

“At the time of his appointment to replace the then-eighty-year-old Greenspan, his area of specialization – the Great Depression and what the Federal Reserve had done wrong in the 1920s and 1930s- seemed quaint. Trying to identify the causes of the Great Depression may be the Holy Grail of macroeconomics, but to the larger public, it seemed to have little practical application in a key government position. Any economic crisis of that magnitude seemed safely in the past.” (Sorkin 2009)

Similar predictions of the end of conflict have been made, of course, at earlier periods in history. Most famously, Norman Angell predicted the end of conventional conflict only a few years before the outbreak of World War One (Angell 1913). Far from being an isolated voice, Angell’s views were in fact shared by some figures within the military establishment of the day. Reflecting on his profession in 1912, a British officer writing in the Journal of the Royal United Services Institute wrote that a major problem for military officers was finding ways in which their military training could be useful to them given the ‘near certainty of peace’ (Mozley 1912). Many decades later, Martin van Creveld similarly prophesied the end of state-on-state conflict shortly before Desert Storm and a decade before Operation Iraqi Freedom (van Creveld 1991).
This is not, of course, to say that it would necessarily be wrong to make the same prediction today. Yet predictions of the demise of state-on-state conflict would be more convincing if there was broad agreement on the causal mechanism underlying the current decline. If the discipline of international relations were confident that we have identified those variables which have caused the drop off in interstate conflict, and agreed that these variables would continue to operate in the same way in future, then we could have more confidence that interstate war is really over. Such a strong consensus, however, eludes the discipline.

Many have pointed to the rise of trade and economic interdependence as key causal variables behind the decline of interstate war. Nonetheless, close statistical analysis of the evidence behind these claims, taking into account such issues as endogeneity (Keshk, Pollins and Reuveny 2004), and spatial (Ward, Siverson and Cao 2007) and duration (Beck, Katz and Tucker 1998) dependence, has revealed this evidence to be unconvincing. Moreover, it is also hard to square with some of the most consequential wars in history - pre World War One, for instance, Britain and Germany were closely interlinked economically. Both traded heavily with one another and invested in one another’s economies (Ferguson 1991). Lloyd’s of London even insured the German merchant fleet against war damage (Haufler 1997). Yet this did not prevent the outbreak of one of the most destructive wars in history between the two states.

Others have pointed to democracy. It has been shown that joint democracy has a significant inhibitory effect on the probability of conflict between states. Moreover, unlike the trade and interdependence findings, this result is relatively robust (Beck, Katz and Tucker 1998). Nonetheless, not all modern great powers are democracies, something which may well not change for some time. Also, the ‘democratic peace’ is itself lacking a clear and convincing causal
mechanism. As Levy and Thompson note, it is an ‘empirical correlation in search of a theory to explain it’ (Levy and Thompson 2010). Without a causal mechanism, the possibility that the democratic peace is spurious remains.

Others still have claimed that nuclear weapons supply the key to interstate peace (Waltz 2003). However, the empirical evidence behind this proposition is again shaky (Bennett and Stam 2004). There are also theoretical objections - knowing that nuclear weapons can protect them from overthrow if they start a war with another state, leaders may be emboldened rather than inhibited from initiating conflicts, the so-called ‘stability-instability paradox’ (Jervis 1984).

Finally, many theorists have looked to American power for an explanation of the decline in inter-state conflict. In this view, the United States chokes off security competition between states and is itself simply too powerful to be challenged by any competitor. Note, however, that if this explanation is true, then the decline in inter-state conflict is indeed a function of American hegemony, then it is not a permanent trend and will in fact be reversed if and when America declines sufficiently relative to other great powers. These theorists, of course, do indeed make this prediction (Mearsheimer 2001).

In a similar vein, some political scientists claim that American (or more generally Western) power lies behind a shift in conflict from conventional to unconventional warfare. According to this view, because enemies of the United States and its Allies know that they cannot challenge its power in conventional warfare, they will resort to unconventional means such as insurgencies and terrorism in future. As John Nagl claims:
“The Persian Gulf War of 1990-1991 may well have been an aberration, the last of the conventional industrial age conflicts; it was certainly a lesson to the states and non-state actors of the developing world not to confront the West in conventional combat.” (Nagl 2005)

Eliot Cohen concurs:

“Where unconventional bypasses to conventional military power exist, any country confronting the United States will seek them out.” (Cohen, cited in Nagl 2005)

While there may be some truth in this theory, it also underestimates the difficulties of switching to an unconventional, insurgency or terrorism-based strategy to ‘balance’ against the United States. For instance, Iraq - taken as a unitary actor - clearly had a much better chance of success against the United States in 2003 if it had foresworn conventional resistance and instead moved straight to an insurgency. Iraq could also be considered a ‘most-likely’ case to have absorbed the lessons of Desert Storm as outlined by Nagl, given that it was the same country, with the same leader, facing the same opponent only 12 years later. Yet, as my empirical chapter on Iraq demonstrates, the severe principal-agent difficulties which faced the Iraqi leadership ruled this option out. Once troops have melted into the population, their leaders face severe difficulties in insuring that they do not simply sit back and do nothing, or even worse go over to the conventionally stronger enemy. Similar considerations could well compel states such as North Korea, Syria or Iran to stick to conventional warfare should they fight the United States or its allies in future. Even Hezbollah chose to use primarily conventional tactics when attacked by Israel in 2006, even to the point of wearing standardized uniforms indistinguishable from those of a conventional Army (Biddle and Friedman 2008). Nor did this lead to a crushing defeat – rather Hezbollah enjoyed a more favorable loss exchange ratio relative to the Israelis than any previous Arab force (Biddle and Friedman 2008).
Besides the theoretical reasons to doubt that we have heard the last of inter-state war, many recent developments in international politics also point in the same way. In the last few years alone, there has been a conventional war between Russia and Georgia\(^2\), further tensions between India and Pakistan in the aftermath of the Mumbai bombings\(^3\), frequent sabre rattling between the United States and Israel on the one hand and Iran on the other\(^4\), the sinking of the South Korean destroyer the *Cheonan* by North Korea\(^5\), Argentinian threats to Britain over the Falklands Islands\(^6\), border shooting incidents between Armenia and Azerbaijan\(^7\) and aerial attacks by Sudan on its newly independent neighbor South Sudan\(^8\).

Overshadowing it all is what promises to be the major question in international security in the coming decades - what will the consequences be of China’s rise to power?

While China has been peaceful since 1979, it cannot be guaranteed that it will remain so in future. China’s autocratic political system does not inspire confidence if one is a believer in the democratic peace. For some realists, security competition, if not war, between a rising China and the United States appears almost inevitable (Mearsheimer 2005). Numerous potential flashpoints exist - from the Korean peninsula to Taiwan to the South China Sea. The latter could prove

especially significant, given that it is thought to hold large oil reserves coveted by a resource poor China and also given that the area is disputed between China and many of its neighbors (Friedberg 2011). Indeed, Chinese state media have already threatened war with the Philippines this year over the Spratly Islands in the disputed sea\textsuperscript{9}. The Chinese military has been undergoing a build-up commensurate with the nation’s rise to economic power, including the potential acquisition of a ‘blue water’ Navy, capable of operating far from China’s shores\textsuperscript{10}.

China’s neighbors have taken note. Consequently, the major powers of the Asia-Pacific have moved \textit{away} from forces built around COIN and \textit{towards} a more conventional-minded structure. This has included heavy investments in military technology which has few conceivable applications to COIN but many to conventional conflict. Japan, South Korea, the Philippines, Singapore, Vietnam, India, Indonesia and Australia have all beefed up their heavy weaponry. For instance, India, Vietnam and South Korea have each recently ordered six attack submarines. Japan is seeking to purchase Patriot missiles and is bulking up its air defense and submarine and anti-submarine capacities. The increase in Australia’s defense expenditure – the largest since World War Two- has gone into such decidedly conventional capacities as protected combat vehicles, strike fighter aircraft and new generation surface warships\textsuperscript{11}. Decision makers from Indian parliamentarians to Australian Defense Planners have explicitly cited fears over China’s


rise as being behind their moves. Australia is particularly intriguing in this regard - once a stalwart part of the COIN campaign in Afghanistan, the Australians are withdrawing their forces from Central Asia and are reorienting their military towards conventional war fighting in their own region. Australian defense planners have obliquely hinted that the United States needs to ensure that the post 9-11 focus on COIN does not lead to the neglect of American conventional warfare capacities in the Asia-Pacific region. Some Australian analysts, however, have been even blunter. As the Australian National University’s Hugh White said:

“For almost a decade America’s political leadership have convinced themselves that a small band of fugitives on the run in Pakistan poses a bigger challenge to America’s place in the world than the economic transformation of the world’s most populous nation. Future historians will find that hard to explain.”

For policymakers in Canberra, Tokyo, Seoul, Manila, Jakarta, Saigon, Singapore and New Delhi, the most pressing national security question of the day is arguably “How tough is the PLA?” not “How do we win a counterinsurgency campaign in Afghanistan?”

To this list, indeed, one might also add Washington DC. For the United States is also slowly moving away from a post 9-11 focus on COIN and turning the confront the challenge of China. The United States is in the process of withdrawing forces from Afghanistan and has withdrawn the bulk of its men from Iraq. Unpopular with Democrats for many years (Miller

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2010), opposition to the Afghan War is becoming increasingly bipartisan, with even conservative Republican Presidential candidates such as Newt Gingrich pressing for an American withdrawal\textsuperscript{17}. As Peter Feaver and Chris Gelpi note, public opinion in the United States is generally far less supportive of new, COIN style operations than of traditional ‘realpolitik’ missions such as defending Korea or Taiwan (Feaver and Gelpi 2004). Just as public opinion helped to ease the United States out of Afghanistan and Iraq, it also may make it less likely that future Presidents will mount similar operations. Instead, President Obama and Secretary of Defense Leon Panetta talk of a ‘strategic pivot’ towards Asia, including deploying Marines to Australia and stationing the majority of the US Navy’s surface ships in the Pacific for the first time\textsuperscript{18}.

Of course, none of this means to say that there will be a war between China and the United States or China and its neighbors. Nor am I suggesting the discipline of security studies should go in the other direction and stop studying COIN simply because the Afghanistan operation is being wound down. COIN is a very worthwhile and important subject which has until recently received less attention than it merits. It is also not my recommendation that armies attempt to use conventional methods and technologies to fight COIN.

My point is simply that given the impact conventional wars have, the probability that there will never be another one would have to be very high indeed before it would pay us to stop devoting significant amounts of time and attention to them. As the discussion above has shown,


\textsuperscript{18} Panetta explains Pentagon pivot towards Asia’, Los Angeles Times, June 1\textsuperscript{st}, 2012, http://latimesblogs.latimes.com/world_now/2012/06/panetta-explains-pentagon-pivot-toward-asia-.html
this threshold has certainly not been met yet. COIN falls further along the impact/probability spectrum than conventional war. It is higher in probability but lower in impact.

In light of this, it remains crucially important to understand one of the key determinants of the outcomes of conventional wars – military skill.

Military skill remains relevant in spite of the huge advances in military technology in recent decades. As the experiences of Kosovo, Afghanistan and Lebanon show, precision guided munitions are of limited effect against skilled opponents who make effective use of concealment, dispersion and cover. The vast majority of the Yugoslav Army’s heavy equipment was able to withstand NATO’s bombardment precisely for this reason, as were the better trained elements of al Qaeda in Afghanistan. Drone strikes, for their part, require very good intelligence on the timing and location of their targets – otherwise they incur civilian casualties to little effect.

Cyber war is an increasingly popular subject with some analysts. However, as the large scale analysis of the history of cyber war by Thomas Rid makes clear, the concept has been arguably overhyped. There are in fact very few if any examples of actual cyber war taking place. Some previous alleged instances have been comprehensively debunked. In fact, Rid concludes, reasonably good developed world government defenses are largely invulnerable to cyber-attack, which is far harder than its proponents suggest (Rid 2012). As Stephen Walt points out, the so-called ‘Y2K’ problem was also the subject of a great deal of trepidation prior to 2000, but turned
out to be illusory. Walt notes that computer security specialists had strong financial incentives to overhype the Y2K problem and the same may be the case with cyber war today\(^\text{19}\).

Even accepting, as a prudent strategist should, that cyber war represents a potential future threat, closer analysis suggests that it would be a supplement to conventional capabilities rather than a substitute for them. In his analysis of Chinese strategy in the event of a conflict with the United States, Aaron Friedberg notes that cyber-attacks would be designed to paralyze the US command and control system at the beginning of the war so as to slow or forestall the deployment of American reinforcements to the Western Pacific (Friedberg 2011). However, the People’s Liberation Army would still need to actually go in and take Taiwan or whatever territory their leaders coveted, and potentially defend it against American counterattacks. The comparison with Pearl Harbor is apt – the Japanese did not believe that their denial attacks on the US Pacific Fleet would end the war in itself, simply that it would make it easier for them to conquer territory in South East Asia through ground forces and then harder for the United States to expel them again (Sagan 1988).

In short, then, in spite of the technological advances which have taken place in recent decades, traditional military skill remains crucially important for understanding the course of modern conflict.

There is another, less obvious, reason why it is important to understand the determinants of destructivity.

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\(^{19}\) http://walt.foreignpolicy.com/posts/2009/10/30/scary_monsters_a_halloween_tribute
As Geoffrey Blainey pointed out, for a war to occur, the two sides must disagree about their respective probabilities of winning (Blainey 1988). If both sides possessed a crystal ball and could see precisely who would win, the side which knew it would lose would cede the stakes to the winner. After all, they know they are going to lose those stakes anyway, and at least by giving in they will save themselves the human and financial costs of war. Of course, desire to establish a reputation for toughness or sheer national pride might in some cases lead a state to fight anyway. My point is simply that, all other things being equal, the less uncertainty there is over who would win a prospective war, the less likely war is to occur.

James Fearon applied this insight in his seminal ‘Rationalist Explanations for War’ to claim that uncertainty about ‘resolve’ is the key cause of war. Fearon, however, rejects as ‘not rationalist’ the possibility that uncertainty over capabilities as well as uncertainty over resolve could also be important (Fearon 1995). Given the enormous difficulties states have had throughout history in correctly assessing the destructivity of their opponents - and hence the likely outcome of the war - it seems that rejecting uncertainty over capabilities as a reason for war is premature. Moreover, recent game theoretic work by Bratislav Slantchev and Ahmed Tahrer suggests mutual optimism is indeed a rational explanation for war (Slantchev and Tahrer 2009), a point also endorsed in an informal response to Fearon by Jonathan Kirshner (Kirshner 2000).

A smaller side might believe that its higher levels of destructivity will make good its numerical disadvantage. A larger side might disagree. World War One could, for instance, be seen as a gamble on both sides as to whether German destructivity would be high enough to compensate for Allied numerical and material superiority. As Paul Kennedy pointed out, an Allied victory would have been easily predictable based on relative numbers, wealth and
resources (Kennedy 1984), making the German decision to opt for war appear irrational. However, the German leadership believed that superior German skill could overcome the collectively larger British, French, Russian and eventually American Armies (Fischer 1961). The Allies reasoned differently. Only by November 1918 did the German High Command reach the conclusion that they had miscalculated. Had the Germans realized that their advantage in destructivity was not large enough to win the war, they could very well have been deterred from launching the war to begin with. More generally, the more both sides can gain an accurate understanding of their relative levels of destructivity without actually going to war, the more uncertainty over relative capabilities (and hence the likelihood of war) is reduced. I therefore agree with Michael Beckley’s assessment that understanding military effectiveness can potentially help to reduce the incidence of war (Beckley 2010).

Understanding the sources of destructivity therefore can help us understand both the course and outcome of interstate wars. Thus it can potentially shorten, alleviate or avoid conflict altogether, or at least bringing them to a more normatively appealing conclusion, for instance by preventing the victory of autocratic or oppressive states or helping potential victims of aggression defend themselves against predatory powers.

1.2 My argument

An Army is a group of men recruited by what game theorists term a ‘principal’ or whom I term ‘the Executive’ in order to defend the state over which he or she presides.

An Army can also be viewed as a large funnel of talent which must compete with the civilian economy to attract the maximum number of qualified, high quality candidates. The more
an Army succeeds in attracting large numbers of such candidates to its ranks to compete first for entrance and then for promotion, the higher its ‘destructivity’ will be. Not only are quality candidates good in themselves, the competition they provide for promotions and advancement drives up standards across the board. It follows that anything which constricts the funnel of talent into the Army will lower destructivity.

Modern armies are divided into two basic levels – the officer corps and the enlisted men. Entrance into the funnel is through these two points – from the enlisted ranks into the NCO corps, and into the officer corps from junior to senior officer level.

Although it is possible to move from enlisted status to the officer corps, it tends to be rare given the number of years required to amass the required promotions through the enlisted ranks if nothing else. Enlisted men are always more common than officers, although the precise ratio usually varies. Enlisted men may be promoted to the rank of non-commissioned officer – an individual with decision making authority over smaller units of men than an officer. Officers, by contrast, aspire to rise from Junior to Senior Status. As they do so, they increase the number of men over whom they have authority, reduce the physical risk to themselves and increase the amount of abstract decision making they must do. Consequently, officers are better paid than enlisted men including NCOs and hence recruit from the wealthier and better educated members of the home society. Officers are also far closer socially and often physically to the center of political power.

It follows from this that the factors which can constrict the two funnels are different.
Given that the officer corps is drawn from the wealthier and better educated sections of society, the state’s literacy levels have less of an effect in narrowing this entrance to the funnel. As officers come from strata of society with generally good alternative options in civilian life, one factor which can hamper destructivity here is that the Army simply cannot compete with civilian employers in terms of pay and conditions. This is especially true as modern Armies operate ruthless ‘up or out’ promotion systems which can leave officers out of a job in early middle age with a purely military education of little utility in civilian life. Moreover, because officers pose a greater potential threat to the Executive’s continued rule, and the degree of this threat increases as one advances further up the hierarchy, the Executive’s perceived coup risk is the key constraint on this section of the funnel. Executives fearing coups take steps to cut off access to the officer corps for potentially disloyal elements, and often promote on the basis of loyalty rather than merit within the corps. This constricts the flow of talent into the officer corps and damages destructivity primarily at the operational and strategic level of operations.

The enlisted men, from whom the NCO corps is normally drawn, are further removed from the center of power and hence less of a risk to the Executive. Here the key potential constriction is the level of education for the broad mass of the population. A good NCO does not need to have a particularly high level of general education prior to joining the Army, but he must as a minimum be able to read and write to a reasonable degree. Reading and writing are not essential for military ‘training’ – stripping and reassembling a machine gun, target practice, fire drills or marching, but they are essential for military ‘education’, an abstract understanding of the battlefield which can allow an NCO to devise his own solutions to tactical problems without direction from above. It follows that literacy is the key constriction on the funnel at the lower level. If literacy is limited in the home society, the Army will have a difficult time recruiting
literate individuals who could make good NCOs. In light of this, an Army recruiting from a low literacy society will have a few suboptimal choices which it can make. It can simply promote enlisted men to NCO rank without reference to literacy. If it does so, however, it will be unable to provide them with any formal military education and they will have limited tactical abilities as a result. The Army will then be compelled to centralize power around the officer corps, which in turn will require more tightly bound formations and slower decision making, making forces more vulnerable to enemy fire and less able to react quickly to unprecedented situations. The Army can try to compensate for this by increasing the number of Junior officers and turning them into de facto NCOs, but this will be expensive and will run the risk of having high Junior officer casualties. A unit with poor NCOs which has lost its Junior officers is in even bigger trouble than whose NCOs are simply poor – it will be essentially leaderless up to company or even battalion level. Alternatively, the Army could go in the other direction and maintain educational standards in the NCO corps, but at the expense of having far fewer NCOs. In this case, NCOs are effectively Junior officers, but there will be far too few of them to lead effective small unit actions. Literacy thus constricts the funnel primarily at the tactical level of warfare.

The reasons why troops fight at all rather than surrender, desert, or simply hide in a ditch until the fighting is over are undoubtedly complex. Nonetheless, in the aggregate, I make certain broad claims. The first is that the broader overreaching goals of the war cannot provide sufficient motivation by themselves to get men to risk their lives. When the bullets start flying, freedom and democracy, Islam, the triumph of the proletariat, the supremacy of the Aryan race or whatever the ideology which supposedly drives the war recedes into the hinter ground. This is because the outcome of one single small engagement in which the soldier has to risk his life is hardly ever crucial for the course of the war. Whether my squad storms this machine gun nest or not will not
determine the course of World War Two, an individual soldier might think, but it could lead to my own death or disablement. Absent other factors, therefore, even a soldier who cares deeply about the reasons for which the war was fought has strong incentives to ‘free ride’ on the bravery of other soldiers for his side to emerge victorious. Harsh negative sanctions such as the death penalty for desertion are not entirely useless – or it would be hard to explain why they have been so prevalent in so many armies throughout history. These sanctions can be crucial in preventing the most clear cut forms of military ‘shirking’ such as desertion or mutiny. However, they are not the whole story. Many of the most important turning points of a military engagement depend upon what soldiers do when their actions are not observable by their superiors and hence cannot be influenced directly by punishments. Rather, soldiers will fight partly because they care about the men next to them, and the esteem in which they are held by them. Nonetheless, this is not a complete explanation – such peer monitoring (Stiglitz 1990), as it is termed in the economics literature, could also result in groups of soldiers cooperating by deserting, mutinying or surrendering together. Motivating units to fight also depends upon the leaders of these small units – NCOs and Junior Officers – having both the desire to fight themselves and sufficiently strong bonds with their men to get them to fight too.

In the forthcoming chapters, I will outline my theory in more detail and contrast it with alternatives drawn from the existing literature on military effectiveness. I will then test my argument using a newly constructed dataset of battles based on, but extending, existing quantitative analysis of military effectiveness and illustrate my causal mechanisms through four in-depth case studies.
2. The Theory

“The ‘Eathen in his blindness
Bows down to wood and stone
‘E don’t obey no orders
Unless they is his own
The ‘eathen in his blindness
Must end where he began
But the backbone of the Army
Is the non-commissioned man”

Rudyard Kiping – The ‘Eathen

2.1 Introduction and Supergame

As we have seen, battlefield outcomes are not a straightforward question of who has the big battalions, or the most or best weaponry. There is a gap between the outcomes of battles and wars which one would expect based on these variables and the historical record. The literature has termed this factor military effectiveness. I term it ‘destructivity’ – the dark martial twin of productivity in economics. What are the sources of this ‘destructivity’?

In many business firms, high productivity results from employees on the factory floor who have spent years honing very specific skills and work in an incentive structure where they can be trusted to put in high levels of effort even in situations where they cannot be readily observed by their managers. Although the potential risks of ‘working hard’ in a military environment are much higher, and the incentives offered by the Army may take on different forms to those of business, I contend that the sources of ‘destructivity’ are very similar.

To illustrate this, let us begin again at the front line. Junior leaders (junior officers and/or non-commissioned officers) are leading their small units in an assault on the enemy’s positions. From the point of view of the Army as a whole, the best outcome is that the junior leaders not
only fight hard but also use their initiative. Say, for instance, that the enemy has left a bridge momentarily unguarded, or that there is an unexplored route around a heavily defended hilltop. Using initiative would mean that the junior leader both recognize and have the incentive to exploit this opportunity.

In order to recognize it, the junior leader needs to have a certain level of military skill – not simply the ability to fire accurately, maintain his weaponry or be in good physical condition, but rather an ability to think abstractly about the battlefield situation in such a way as to devise his own solutions to novel problems. As the US Army Field Manual puts it:

“Leaders at every echelon must have a clear understanding of the mission, intent and concept of the operation of the commanders one and two levels higher. Without this understanding, it would be difficult to exercise disciplined initiative.” (US Army Field Manual 3-21.8, 5-27)

The junior leader needs, in short, not just military training but military education – a formal process requiring the mastery of theoretical concepts in topography, tactics and even military history. This requires a prolonged prior investment of the junior leader’s time and effort in acquiring knowledge which may have little application outside the Army. It also requires an ability to read and write to a reasonable degree.

If the junior leader does recognize the opportunities presented to him by the battlefield, the Army needs to be able to motivate him to seize it. Using initiative is risky – cross the bridge and one risks being cut off and surrounded. Perhaps the apparently unguarded route around the hill in fact masks an ambush. His superiors need to get him to think that if he takes the hill via the unexplored route, or crosses the bridge and breaks the enemy’s frontline, that he will be well rewarded for his courage. Promotions, citations or medals could lead to enormous social prestige
in his home town, to respected and well paid employment, perhaps in the civil service or state sector and to a comfortable and garlanded retirement.

Destructivity thus results from the lower level leaders of the Army, whom I shall term the junior leaders, having the incentives to develop their military skills intensively and to practice them in fluid situations which cannot be closely directed or monitored by superiors. I outline this process formally below.

I conceive of an Army as a ‘funnel’ with various ‘choke points’ at which entrance may be constricted. The Army’s skill level is denoted $p_{v|i}$, that is, the probability of victory for each type of Army. At each stage, the Army’s skill level $p_{v|i}$ is maximized the more individuals choose to try to get past the choke point rather than simply leave.

Although the logic is the same, there are two basic funnels which can, as we shall see shortly, be constricted by different things – the enlisted to NCO funnel and the officer funnel. The enlisted funnel is where individuals enter who may eventually become the Army’s lowest level leaders – the non-commissioned officer corps. The officer funnel is where individuals enter who have the potential to become the Army’s highest level strategic leaders. It is possible to enter the Army at the enlisted level and work one’s way up into the officer corps, but this is rare, especially in peacetime. The years required to work one’s way up from entry level (i.e., private) to the most senior level NCOs (warrant officers in the Anglo-American tradition) mean that an NCO will usually be relatively old by the time he can consider joining the officer corps, often too old for the relatively physically demanding tasks facing a junior officer.
2.2 The Funnels

Figure 4: A theoretical representation of the ‘funnel’

Now let us suppose a few things. Let us say that the Army needs $x$ candidates to fill the top tier of the funnel. He has $n$ candidates to choose from and admits $\pi_f$ proportion of the candidates to each tier. He also has a budget constraint $\bar{B}$ which is the total amount of money he can spend on rewarding all officers at each stage.
I am including five stages for illustrative purposes, with an additional stage – s – for screening, which some armies may also choose to adopt. This issue will be discussed at more length below.

To maximize the Army’s skill level \( p_{v|t} \) it must be true for the maximum number of individuals that they 1) reach the minimum entrance requirements, 2) choose to enter the military profession and 3) remain in it as long as they can. Formally, this means that

(I) \( a_0 < a_1 + p_1 r_1 + (1-p_1) a_1 + \sum_{j=2}^{5} (p_j \mid p_{j-1}) r_j + \sum_{j=2}^{5} a_j \)

(II) \( a_1 < p_1 r_1 + (1-p_1) a_1 + \sum_{j=2}^{5} (p_j \mid p_{j-1}) r_j + \sum_{j=2}^{5} a_j \)

(III) \( a_i < r_{i-1} + \sum_{j=i}^{5} (p_j \mid p_{j-1}) r_j + \sum_{j=i}^{5} a_j \; \forall \; i \in (2,5) \)

As described verbally above, poorer alternative options for qualified candidates (\( a_i \)) encourage enlistment but reduce the incentives to acquire the minimum entry standards and so have an ambiguous effect on the Army’s skill level \( p_{v|t} \). (Condition I)

Likewise, good alternative options for those who have already entered the profession (\( a_j \)) increase recruitment but damage retention and so are also ambiguous for skill levels. (Conditions II & III). The formalization helps us to see clearly that this is the case – for each level \( j \), lower values of \( a_j \) give an officer incentives to remain within the Army, but reduce the incentives for him to have either joined the Army or remained within it up that point.

Rewards (\( r_j \)) are unambiguously good for skill but cannot surpass the budget constraint in total.

Now for a screened Army, individuals who get to the upper levels of the tournament must have satisfied the three conditions above and one additional one, specifically
That is, they must have demonstrated their loyalty to the Executive through up-front sacrifices prior to entering the Officer Corps.

Now to show why having a large pool of candidates at every level maximizes the Army’s skill level $p_{v|l}$, let us start with a simple game involving two officers, Leader 1 and Leader 2.

The two Leaders choose simultaneously whether or not to invest in their military skills in the hope of being promoted. If one invests in his skills and the other does not, the one who invests is promoted. If both invest or neither invest, then Leader 1 is promoted with probability $\pi$ and Leader 2 with probability $(1 - \pi)$. The best outcome for each Leader is to be promoted without having to bother investing in his skills $b^{i-p}$ – each can devote the time instead to leisure pursuits. The second best is to be promoted after having invested in his skills $(b^{i-p})$, the third to not be promoted and not invest $(b^{i-p})$ and the worst is to not be promoted having invested in one’s skills $b^{i-p}$.

The game is outlined in matrix form below:

<table>
<thead>
<tr>
<th>Invest</th>
<th>~Invest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invest</td>
<td>$\pi b^{i-p} + (1-\pi)b^{i-p}$, $(1-\pi) b^{i-p} + \pi b^{i-p}$</td>
</tr>
<tr>
<td>~Invest</td>
<td>$b^{i-p}$, $b^{i-p}$, $\pi b^{i-p} + (1-\pi)b^{i-p}$, $(1-\pi) b^{i-p} + \pi b^{i-p}$</td>
</tr>
</tbody>
</table>
Now there exists a Nash equilibrium in which both Leaders invest. Specifically

If Leader 1 = {invest} then Leader 2’s best response is to invest if

\[(1-\pi) b^p + \pi b^{i-p} > b^{-i-p}\]
\[\pi < (b^p - b^{-i-p}) / (b^{i-p} - b^{i-p})\]

If Leader 2 = {invest} then Leader 1’s best response is to invest if

\[\pi b^p + (1-\pi)b^{i-p} > b^{-i-p}\]
\[\pi > (b^{-i-p} + b^{i-p}) / (b^{i-p} - b^{i-p})\]

Thus if the Executive sets \(\pi\) to obey the following constraints then there is a Nash equilibrium in which both Leaders invest in military skills

\[(b^{-i-p} + b^{i-p}) / (b^{i-p} - b^{-i-p}) < \pi < (b^{i-p} - b^{-i-p}) / (b^{i-p} - b^{i-p})\]

In short, if there is competition between Leaders for promotions and other rewards, and a fair chance of getting those rewards, then they will invest time in their skills and the result will be an Army with a high level of overall skill \(p_{e|i}\).

Generalizing this to the case of many applicants, suppose that the level of effort which a given Candidate \(i\) makes is a function of the expected benefits of reaching level \(j\) times the probability of reaching this stage \(p_j\). The probability of reaching this stage in turn is a function of his ability \((c_i)\), the proportion of candidates who are accepted into the next level \((\pi_j)\) and their average level of ability and effort \((\bar{c}\bar{e})\). Formally,

\[\text{Pr(Reach Level J)} = f(c_i, e_i, \pi_j, \bar{c}\bar{e}) = p_j\]
This implies that for a given level of reward \( r_j \) for reaching Level \( j \), the effort level \( e_i \) which each candidate makes is decreasing in \( \pi_j \) and hence increasing in \( n \) and in \( \bar{c} \) – that is, the average skill level of Candidate \( i \)'s applicant pool. This is shown graphically below:

**Figure 5: Relationship between the size of the candidate pool and each individual candidate’s efforts to master military skill**

It therefore follows that the amount of skills which leaders possess at all levels of the Army is a function of (among other things) the number of qualified candidates who attempted to enter the tournament to begin with. The lower the number of qualified entrants, the more the Army will have to lower the required standards in order to fill the vacant positions and hence the less the Candidates will have to try to gain access to the higher levels.

What can constrict the talent pool?

### 2.2.1. Consequences of Low Literacy Levels
In societies with low levels of literacy, those individuals who can read and write will enjoy high alternative options. It will therefore be difficult for the Army to recruit them, given the budget constraints. Consequently, the Army will have to lower its expectations in terms of the level of military education it can expect. Completely illiterate individuals will have to be restricted to oral instruction and a set rote learned drills. The problem with this is that it will reduce their ability to devise solutions to problems which have not been pre-gamed and worked out by their superiors. Their superiors will consequently be very unwilling to devolve real power to them and will insist on centralizing command and control.

It should be noted that low levels of literacy are less of a problem for the officer corps than for the leaders at lower levels of the Army, that is, the non-commissioned officers. Because officers are rarer in all Armies than enlisted men, and it is a job which offers relatively greater safety but demands more intellectual effort, the officer corps will be recruited from the wealthier and better educated segments of society. To take one of the surprisingly few instances on which we have specific data on the breakdown by rank, the German Army of 1913 was composed of 5% officers and 95% enlisted men. Officers comprised only .00051429% of the overall population. Even allowing for the fact that literate individuals will be needed for many other administrative tasks in a society at war, this still comfortably allows an Army to recruit a 100% literate officer corps even if the overall level of literacy in society is low.

By contrast, the enlisted men tend to be drawn from the poorer sections of society. The enlisted man is more numerous, faces greater risks but takes fewer decisions than the officer. As a result enlisted men are generally paid less than officers, which means that the Army competes for their services with skilled and unskilled manual laboring employers. The leadership cadre
amongst the enlisted men – the non-commissioned officers – are usually drawn from the ranks of
the enlisted men themselves. Consequently, NCOs are also drawn from the poorer and less well
educated elements of society. Hence it is in the non-commissioned officer corps that the full
effects of low literacy are felt. Literate NCOs will be hard to come by in low literacy societies.
Armies can increase the number of junior officers and turn them into de facto NCOs. This,
however, is even more problematic – it is expensive and leads to high junior officer casualties.
Small units with ineffective NCOs whose junior officers have been killed will be completely
lacking in leadership. By reducing the number of NCOs, Armies can maintain higher standards,
but this makes independent small unit action much harder. The effects this has on the Army’s
tactics and destructivity will be outlined in below.

2.2.2. Politically motivated restrictions in the Officer Corps Funnel

Some Armies can choose to impose an additional stage – described formally above as ‘s’
– through which potential leaders must pass in order to be promoted. This stage involves some
means of ensuring loyalty to the existing political regime. The Army can, for instance, insist that
all officer candidates be members of the ruling party. Of course, an ambitious officer candidate
who was not loyal to the existing regime would also have incentives to join the party for personal
advancement. To forestall this, ruling parties can compel candidates to make costly sacrifices
both in order to weed out insincere types and to lower the value of alternative regimes. For
instance, parties can compel officers to master arcane details of their official ideology, to devote
time to studying the leader’s speeches or biography or to composing party propaganda. The more
individuals invest time and effort in such activities, the bigger the stake they have in the
continuation of the current incumbent’s rule. Mastery of the ruling party’s ideology will gain one
advancement if the party remains in power, but will be utterly useless if someone else is in charge.

Armies can also insist on rigorous political background checks of potential officers before they enter the military. Any history of political dissent by the candidate, or even amongst close friends or relatives, can be sufficient to rule a candidate out of consideration.

In contrast to literacy, these restrictions mostly affect the officer rather than the NCO corps. This is because officers are far closer to the center of power than NCOs and hence a much bigger potential threat to the regime. Overthrowing a government is a risky collective action problem. Collective action problems are best overcome by small, tight social networks of individuals who know and trust one another. A sergeant will mostly know and trust other sergeants, but collectively they have command over only a miniscule proportion of the Army’s total strength. They can have no assurance of the behavior of most fellow soldiers and hence will be less willing to move on the center of power. A general by contrast may very well have close personal ties with the commanders of the majority of the Army, making a move on power much more tempting. A closer examination of these dynamics is offered below.

Such politically motivated restrictions obviously narrow the funnel at the officer corps level and hence damage incentives and destructivity. Why then would a political leader choose them? The answer depends on his perceived security against a military takeover. The determinants of this perceived security are outlined in below.

2.2.3. **Good alternative options on enlistment and poor post service prospects for both funnels**
Given that the Army is in competition with civilian employers for personnel at both the enlisted and officer levels, good civilian employment prospects for potential soldiers can also act as a constriction on the funnel. At the same time, all Armies face what is known as an ‘up or out’ problem. That is, the physical demands of military service mean that unless he or she is able to transition into the higher levels of command, a soldier will be compelled to leave the service in early middle age, before his or her working life is over. Individuals considering a military career as a young person must face the probability that in some years’ time they will have to find a second career to support themselves and whatever family they may have. Yet the military education they receive, especially in the fighting ‘teeth’ branches of the Army, does not equip them with many skills which are transferable to civilian life.

Either of these two factors – good alternative options on enlistment, or poor options after retirement from the service – can act as constrictions on both the enlisted to NCO funnel and the officer corps funnel. If two states fight one another and both have the same level of literacy and political stability, these two often overlooked factors can become crucial.

2.2.4. The Tactical Consequences of a Constricted Funnel

The Army is composed of superiors and subordinates with the superior issuing orders, granting rewards and imposing punishments according to guidelines established by the political leadership. Of course, on some occasions the political leader would personally intervene in these matters, however as a practical matter his reserves of time and attention are not sufficient for him to do so on every occasion no matter how much he might want to. He can, however, establish how the superior is to reward and punish his subordinates and punish him if he receives information that he has strayed from the guidelines.
The superior has to decide how to manage his subordinates in fighting the enemy. The first of his choices is whether to micromanage his subordinates. In this strategy he lays down very specific guidelines as to what precisely is expected from the subordinates – which hill to assault and when, whether to request artillery support, when the objectives need to be obtained by – and a very specific schedule of rewards and punishments for each of these actions. In the battles of the eighteenth and nineteenth century, such a strategy would have been very feasible and probably optimal. The enemy’s and one’s own battle lines would have been laid out precisely and within the sight of the superior. The distinction between a subordinate shirking and working would have been clear and easily observable. However, for the twentieth century and into the twenty-first, as observers such as Martin Samuels and Stephen Biddle have noted, advances in firepower greatly increased the dispersion of military formations and hence reduced the observability of subordinates by superiors (Biddle 2004; Samuels 1992, 1995).

It should be noted that at least one analyst has made the opposite argument. Douglas Allen claims that the observability of subordinates by superiors has in fact increased since the age of the musket. Allen notes that the smoke from musket fire made it difficult for commanders to observe their troops’ actions on the pre-modern battlefield. While Allen may be correct that the pre-modern battlefield offered lower observability than Samuels and Biddle assumed, it is demonstrably incorrect that observability is higher in modern conventional warfare. The density of conventional military formations has been carefully measured and has shown a marked decline as firearms have improved in accuracy – from 3883 soldiers/km² in the American Civil War, to 404/km² in World War One, to 36/km² in World War Two finally to 25/km² in the Yom Kippur War of 1973 (Dupuy 1980). In such circumstances, it is very difficult for superiors to observe the actions of their subordinates, even with the aid of aerial surveillance. This is especially true given
that one’s subordinates are deliberately trying *not to be seen*. From World War One onwards, armies’ defensive doctrines have centered on the concept of the ‘empty battlefield’—defensive positions should be not only concealed but scattered in a random pattern to give the enemy as little idea as possible of one’s position. Yet of course if it is hard for the enemy directly in front of you to know where one is, it is harder still for one’s headquarters behind the lines to determine one’s positions and actions accurately.
Figure 6: Troop density per square kilometer over time

While increases in the volume and accuracy of firepower have given armies incentives to increase their level of dispersion, and the *average* level of dispersion has indeed increased, this masks a great degree of variation in the ability of armies to operate dispersed formations effectively. The ability of an Army to implement dispersion is a function of two things – the radius of effective communications between superiors and subordinates and the ratio of
trustworthy subordinate leaders to enlisted men. For a given radius of effective communication – let us call it $r$ – the degree of dispersion increases as the ratio of NCOs to enlisted men increases too. To illustrate this, suppose that there are two small platoons of 16 men each. In one platoon, there is only one NCO and in the other there are two. In the platoon with only one, the enlisted men must bunch up more closely in order to be within the NCOs radius of effective communication whereas in the platoon with two NCOs they can afford to be further dispersed.

These two situations are illustrated below.

Figure 7: Two NCOs, greater dispersion (E represents each enlisted man who is not an NCO)

Figure 8: One NCOs, greater concentration.
More NCOs and higher dispersion implies a system of decentralized control (d). In this system, the superior sets broader long term goals for his unit and leaves it up to the subordinates to devise the best way to implement them. In traditional military terminology, decentralized control means that the superior leaves allows a great deal of latitude for all-important individual initiative on the part of the subordinates. Specifically, this means taking advantage of fleeting opportunities of which the superior is unaware, using private information about the battlefield for the good of the Army as a whole. While it may appear at first blush that this would be the superior’s best option if observability is low, decentralized control brings with it two potential problems. If these problems cannot be resolved, then it may be in the interests of the superior to adopt the less effective centralized control system, which in turn implies a more concentrated dispersion of forces as depicted in diagram (ii) above.

The first is a skill issue. Initiative requires that the subordinates have a relatively high degree of military knowledge and skill. They must know how to solve tactical problems such as assaulting fixed positions or mixing artillery and small arms fire effectively themselves. This is where the importance of having the broader more unconstrained funnel of talent described in section I can most obviously be seen on the battlefield. Subordinates who have worked hard to acquire military specific knowledge in the hope of advancement will certainly have the capacity to show initiative.

The second is an issue of incentives. In many cases, a subordinate using initiative may be difficult to distinguish from a subordinate shirking. Initiative may sometimes mean retreating from a difficult to a more defensible position about which the superior is unaware, it may mean
outflanking tough enemy positions rather than assaulting them head on, or requesting additional air or artillery support beyond what had been thought necessary. A subordinate who used his initiative properly but who failed through bad luck in a given operation will have a hard time convincing his superior that he was not shirking – because a genuine shirker would have incentives to say the same thing.

Previous work on the issue has suggested that long term bonds between small groups of soldiers – primary unit cohesion - was the key in inducing men to overcome their natural fear of death or injury and fight hard even when not directly observable by their superiors. However, primary unit cohesion amongst the enlisted men can represent a double-edged sword. Men who trust that their comrades have ‘got their back’ can certainly cooperate more easily. However, this could just as easily mean cooperating in shirking as cooperating in fighting. The men could agree to abstain from pressing home an attack on the enemy and then cooperate in swearing to their superiors that they tried their best but the enemy was too strong. As noted in the literature review, this phenomenon was observed amongst US units in the Korean War by psychologist Roger Little (Reuven and Mangelsdorf 1991). In order to ensure that cohesive small units cooperate in fighting rather than shirking, the superior needs to ensure that the subordinates who lead these units are highly rewarded for actions which lead to the achievement of goals over and above the basic or minimum objectives which the superior originally set.

If there are enough individuals within a unit with such positive inducements for the unit to do well, then a benign (from the point of view of the Army) tipping point will be reached. Other members of the unit will choose to fight too. Moreover, they may join in levying an informal set of punishments on any individuals who still choose to shirk. An equilibrium of
decentralized cooperation on fighting may be reached even in situations which cannot be closely observed by superiors. To observers of business organizations, this system is known as ‘peer monitoring’.

Harsh negative punishments, by contrast, are less effective in inducing Armies to show initiative. In extremis, a superior cannot execute a subordinate for failing to take advantage of an opportunity on the battlefield which was known only to the latter. If a superior harshly punishes a subordinate who took a risk and deviated from orders unsuccessfully, then he runs the risk of ‘killing the goose that laid the golden egg’. That is, other subordinates will stick rigidly to the superior’s directions even if they know that there are other potentially more effective opportunities on the battlefield. The phenomenon was noted by British war correspondent Leo Amery as long ago as 1900:

“The natural instinct of the superior will continually lead him to interfere directly in the work of his subordinates instead of judging it by its result; the natural instinct of the subordinate will lead him to disclaim responsibility and to do nothing without direct orders…..The subordinate is alternately idle and overworked, ceases to think how the business of his department might be improved, acquiesces in what he knows to be mistaken, and is only concerned with carrying on his duties sufficiently well not to get into trouble” (Quoted in Samuels 1995)

Nor can a superior set a broad objective and execute all those who fail to achieve it. Given that there is some noise around battlefield outcomes, such a course would lead to the execution of good fighting men as well as shirkers and could ultimately lead to serious manpower shortages. In short, then, harsh negative sanctions cannot foster initiative.

This is not to say that harsh negative sanctions are pointless. It would be hard to explain why they have been so prevalent in military forces throughout history if they were. Many military historians such as Hew Strachan have pointed out that they are an often underrated factor in
generating military effectiveness (Fennel 2011). Yet their utility is greatest under certain specific circumstances. Negative sanctions are most useful in situations in which shirking can most easily be observed by peers and superiors. Holding fixed defensive positions or launching massed human wave attacks are two obvious examples. Here there can be little question that an accused shirker was not simply unlucky.

At the same time, in armies which have systematically low levels of military knowledge anyway, the damage done when subordinates cease to display initiative is small in any event. In such circumstances, superiors may feel that subordinates would not have the skill to use their initiative correctly even if they had the motivation to do so. Punishing them harshly at least ensures that they will do the minimum required of them.

Conversely, negative sanctions are circumscribed by the enemy’s reputation for dealing with prisoners. As Dan Reiter pointed out, faced with harsh discipline in their own Army versus an enemy who treats PoWs leniently, soldiers may be tempted to shirk simply by surrendering without a fight (Reiter 1997). This last point should not be oversold, however. Potential shirkers must take care not to be caught by their officers in the act of surrendering and must be aware that they could in future be repatriated from PoW camps and punished by their own side. Given these qualifications, however, the enemy’s potential for merciful treatment of PoWs does impose some limits on the usefulness of harsh negative sanctions.

I will now outline the structure of this micro-game formally.

The Superior – S – is the first mover in the game. He has to decide whether to micromanage (m) his subordinates - \( f_i \) and \( f_k \) - or adopt a system of decentralized control (d).
$b_f^J$ is my term for the benefits accruing to subordinates from victory. $b_f^J$ most obviously takes the form of promotions and commendations, which in turn could lead to better and more secure pensions, post-war employment (perhaps in the public service or state-run industries) or social prestige in one’s home community. This is where the problem arises for a constricted funnel Army – if there is little competition for promotions and commendations or if they are awarded for political loyalty, then there are few positive incentives which the superior can offer the subordinates in return for showing initiative. Hence I shall introduce new notation - $b_j^{i|o}$ is the reward for successfully using one’s initiative in a broader funnel Army and $b_j^{i|s}$ is the reward for using one’s initiative in a narrower funnel Army. $b_j^{i|o}$ is greater than $b_j^{i|s}$ either because in a narrow funnel Army one has less competition for promotions and so does not need to exert oneself to quite the same degree in order to obtain them, or because in a narrow funnel Army promotions are doled out at least partly with an eye on political loyalty and hence battlefield achievements have less of an effect on one’s prospects.

To show why harsh negative punishments are ineffective in generating initiative, consider the gap in perception between the superior and the subordinate. The bigger this gap is, the worse the effect on the incentives of the subordinates to use their initiative if the superior uses harsh punishments (high levels of $\tau$). If the superior is likely to make a mistake in judging $J_i$’s actions (at least from the point of view of $J_k$), then negative sanctions will give them strong incentives to stick to the minimum and avoid showing any initiative. This result does not depend on any assumption of bias on the part of the superior, or of concerns about fairness from the subordinate, but of simple self-interest on their part. To illustrate this I will introduce some more formal notation and a simple illustration.
Suppose the superior’s belief about $J_i$’s behavior is $p_s$ - that is, the superior’s estimate of the probability that the subordinate shirked rather than was simply unlucky. I will introduce some new notation $p_j$ to denote $J_k$’s beliefs about $J_i$’s behavior. The higher $p_s$ and $p_j$, the likelier it is that each actor believed that $J_i$ did not use his initiative correctly and hence deserves to be punished. Both $p_s$ and $p_j$ follow the cumulative standard normal distribution with means $t + \varepsilon_j$ and $t + \varepsilon_s$ accordingly, where $t$ represents an unbiased estimate of the probability $J_i$ acted appropriately. $\varepsilon_j$ and $\varepsilon_s$ are normally distributed random variables with means 0 and variances $\sigma_j$ and $\sigma_s$ respectively, where $\sigma_s > \sigma_j$. In other words, the subordinates and the superiors will on average converge on the same estimate of whether $J_i$ acted appropriately, but that the variance in the superior’s judgment will be higher because his ability to monitor $J_i$’s actions is less. The bigger the difference in the variance of the superior’s judgment of $J_i$’s actions relative to that of $J_k$, the more likely they are to disagree on the correctness of the superior’s decision to punish $J_i$. This can be seen from examining the diagram below:
Figure 9: Probability of disagreement between Junior Officers and Senior Officers as a function of battlefield ‘noise’

In this example, let us say that the cut-off point for judging $J_i$ to have shirked is .5. Although the superior will on average reach the same judgment as $J_k (.4)$, because the accuracy of his view is lower, he will disagree with their judgment rather frequently. Moreover, the greater the divergence between the accuracy of the subordinate’s view and that of the superiors (i.e., the greater $\sigma_j - \sigma_s$), the more often they will disagree on the correctness of a decision to punish $J_i$.
This area of disagreement is represented graphically above as the density between the broken and solid lines to the right of .5 on the x-axis.

Now let us relax the assumption that the superior and $J_k$ converge on the same estimated probability that $J_i$ shirked. Let us say that $J_k$’s estimate is centered around some mean probability $t_{J_k}$ where the superior’s is centered around a different mean $t_s$. Even if they now have the same confidence levels in their estimate, the probability that their views will diverge on whether $J_i$ shirked is even higher now. This divergence is represented graphically below. As the simulations make clear, only a small difference in mean judgment between the superior and subordinate can lead to a substantial number of disagreements on the propriety of punishing $J_i$. 
Figure 10: Probability of disagreement between Junior and Senior officers as a function of systematic differences in their view of the battlefield.

Now, the more $J_k$ perceives the superior to have punished $I_i$ incorrectly for having used his initiative, the more likely they will be to stick to orders and refuse to take advantage of local private knowledge, even though this course of action is socially inefficient from the point of view of the Army as a whole – all subordinates will stick to the minimum objectives and valuable opportunities will be missed. Furthermore, more severe punishments will have the same effect – they will tend to dissuade subordinates from displaying initiative. One does not need to assume that the superior is biased in his judgments or that he has malign intentions in order to see that
this would happen – he simply needs to be seen to have a lower ability to perceive the battlefield situation accurately.

As the computer simulations in the appendix demonstrate, one does not need a huge degree of difference in judgment in order to generate a substantial number of disagreements between the superiors and the subordinates over whether $J_i$ shirked. Only if the superior and $J_k$ both have a very high degree of certainty (that is, if $t$ approaches 0 or 1) over whether $J_i$ shirked is it likely that few disagreements will arise.

Knowing this, however, a rational superior will tend to rely on $\tau$ or harsh punishment less, the more he realizes that his knowledge of the battlefield is far less accurate than that of his subordinates and provided he has confidence that his subordinates have the necessary knowledge to use their initiative correctly. Interestingly, this result does not depend on his regime type or good intentions but rather his ability to recognize that excessive interference and overly severe punishments would ‘kill the goose that lays the golden egg’ - that is, his subordinates’ ability to demonstrate initiative.

With a decentralized system, however, the superior is faced with a new problem – moral hazard. In order to incentivize the honest subordinate to use his initiative, he runs the risk of enabling the shirker to go unpunished by claiming that he too had simply used his initiative and was unlucky not to have achieved his basic objectives.

What mechanism does the superior use to deal with this problem? The answer lies in the system of subordinate peer monitoring.
Say that $J_i$ and $J_k$ realize that their own prospects for advancement $b_j$ are partly determined by what the other does. Intuitively this makes sense. Two Lieutenants in the same company, for instance, may only be able to achieve their objectives if both fight. If $J_i$ fights but $J_k$ does not, then assuming $J_i$ survives to tell the tale, he will be unable to achieve his objectives and hence will have very little chance of advancement. It thus makes sense for each of the two subordinates to supplement whatever punishment scheme the superior is able to devise with a system of peer monitoring of their own. Following the work of Abrams, Iversen and Soskice (2010) on the determinants of voting, and Geoffrey Brennan (2004) on the hidden economy of esteem, this approach can be seen as a combination of rational choice and social psychology.

Peer monitoring can consist of a system of social ostracism – D - of those who are deemed to have shirked in their duties and a system of approval – A – of those who are deemed to have performed well. The psychological burden of ostracism by those with whom one has formed close ties could well be sufficient punishment in itself to induce subordinates to fight alongside one another. Alternatively, of course, the ostracism could induce a fear on the part of the potential shirker that he will not be helped out by other subordinates if he is in danger himself. The first is a social-psychological mechanism and the second a reputational, reciprocal one.

This leads on to the question – why are subordinates prepared to pay the costs of monitoring one another? In microfinance where the concept of peer monitoring originated, small groups of borrowers are incentivized to monitor one another by being made partly liable for each other’s debts (Stiglitz 1990). In fighting, the interest which subordinates have in monitoring each other’s behavior is even more direct – one shirker can lead to death or disability for the other members of the group. Soldiers consequently have strong incentives to monitor the behavior of
their peers- they are ‘cosigning’ for each other’s actions with their lives, in effect. Moreover, given that fighting units are generally very small (the basic tactical unit of the modern US Army is a fire team of four soldiers), the incentives to free ride on other soldiers’ monitoring efforts are low (US Army Field Manual 3-21.8, 3-35).

Now why do soldiers cooperate in fighting rather than shirking? This depends on the actions of the unit leader. In the smallest tactical units, this leader is a non-commissioned officer. This lower level leader is usually tasked with taking the first steps in combat, establishing clear expectations amongst his subordinates as to the actions expected from them, red lines between fighting and shirking. As the US Army’s tactical field manual relates:

“The leader’s standing order to his Soldiers is: ‘Follow me and do as I do’. When he moves to the right, his Soldiers should also move to the right. When he fires, his Soldiers also fire. When using the lead by example technique, it is essential for all soldiers to maintain visual contact with the leader.” (US Army Field Manual 3-21.8, 3-35)

How can armies structure the lowest level leader’s incentives to ensure cooperation in fighting rather than shirking?

The first way is through screening. It is vital for armies to ensure that the lowest level leaders they select are ‘fighting’ rather than ‘shirking’ types. There are three ways to do this. First, systems based around promotion by seniority with probationary periods give officers and senior NCOs time to observe the actions of enlisted men to filter out those who may not be trustworthy enough to lead before they enter the NCO corps. Second, psychological testing can be used to attempt to gauge the likely response of soldiers to enemy fire before they have even entered basic training. Third, acts of valor in the face of the enemy provide a costly signal of
fighting ‘type’. Besides constituting an obvious reward, therefore, promotion for valor is an efficient mechanism for putting the correct sort of individual into a leadership role.

The second way is through the lowest level leader’s prospect of advancement $b_f$. The system depends for its operation on the existence of a core of subordinates who have a strong stake in the success of the operation for their own advancement – which depends in turn on promotion through merit. If battlefield performance is less important for advancement than political affinity, then there is no reason for the subordinates not to take advantage of the superior’s leniency and shirk or to fail to punish those who do likewise. Crucially, knowing this, the superior will insist on a system of micromanagement ($m$) with high levels of negative sanctions $\tau$, even though this will generate a lower level of destructivity.

In short, then, all important initiative is more likely in a broad than in a narrow funnel Army for two reasons. First, the broad funnel Army will have the competition for advancement which induces officer candidates to invest heavily in their military skills, meaning that they have the competency to demonstrate initiative. Second, knowing that his subordinates have the knowledge necessary to use their initiative appropriately, the superior will be less inclined to impose initiative-quelling harsh punishments. Third, the broad funnel Army will be able to reward those who show initiative appropriately, which also gives them incentives to monitor and punish potential shirkers tempted by the more lenient punishment scheme which is necessary for initiative to operate.

At this stage an additional note is necessary. Although the period from the late nineteenth century to the present day has broadly seen a decline in the monitorability of Junior Officers by Senior Officers, in the early twenty-first century satellite technology and remote cameras have
seen the pendulum swing back in the opposite direction somewhat. If and when closed militaries gain access to this technology, their difficulties in motivating troops to show initiative may well decline – because the informational gap would decline, the ability to use harsh punishments would once more increase. It is possible, of course, that the Junior and Senior Officers of closed militaries will react strategically and win concessions from the Executive in return for the introduction of such technology, as Feaver and Coletta report the US military doing over Kosovo (2006). For now, it suffices to note that only open Armies have so far deployed this technology, so this must remain speculative. Moreover, satellite technology probably does not reduce the need for skill in order to demonstrate initiative- minutely directing military operations in real time via satellite link is inordinately difficult. The Junior Officer at the other end of the link must still have a very good idea of what he is doing.

With this caveat in mind, I now demonstrate formally the conditions under which first, the superior will be prepared to adopt a decentralized system of control and second, the subordinates will be prepared to use the peer monitoring needed to make it work.
2.2.4.1 Devolving Power, Showing Initiative Equilibrium

$p$ - the probability that a superior will make a mistake in judging the actions of a subordinate.

$\tau$ - is the punishment meted out by the superior for shirking

$b_i^j$ - is the benefit to the superior if the subordinate displays initiative and $b_s^o$ - is the continuation benefit to the superior if the subordinate does not display initiative, $b_i^j > b_s^o$.

$b_j^o$ is the benefit to the subordinate from showing initiative if his contribution is correctly assessed and $b_j^o$ is the benefit to the subordinate if he obeys orders, again $b_j^o > b_s^o$.

2.2.4.1.1 Conditions

(I) \[ pb_i^j + (1-p) \tau < b_s^o \] - This implies that if the superior interferes then the subordinate will not show initiative

(II) \[ b_i^j > b_j^o \] - This implies that if the superior does not interfere then the subordinate will show initiative
$b^S_i > b^S_o$ - This implies that the superior will not interfere in order to ensure that the subordinate will show initiative.

2.2.4.2 Peer Monitoring

J- Subordinate

S-Superior

d-devolve power

m-micromanage

f-fight

s- shirk. A subordinate can also decide neither to fight nor to surrender. This decision is sufficiently distinct from the surrender option to merit separate treatment. Depending on the enemy’s reputation for treating prisoners and his own side’s disciplinary regime, shirking may or may not be safer than surrendering. Shirking may take on many forms – from blatant ones such as desertion or mutiny (a form of group shirking) to more subtle forms of shirking behavior such as self-inflicted wounds, hiding on the battlefield or unauthorized retreat.

$\theta$- The subordinate’s Payoff if he surrenders to the enemy. $\theta$ is exogenous and determined by the enemy. $\theta$ can be considered the subordinate’s estimation of his likelihood of being well treated if he is captured by the enemy. Note that the bigger $\theta$ is, the more difficult it is for subordinates to be motivated to fight by their own side through negative incentives – if $\theta$ is higher, ie the enemy can credibly commit to treating prisoners well, then harsher punishments for shirking may simply encourage subordinates to surrender. I term this – analogously to the ‘participation constraint’ in principal-agent theory- the ‘surrender constraint’.

$p_S$: the probability that subordinate i’s not fighting is detected by the superior
the punishment meted out by the superior if he detects shirking by the subordinate. Note
that there may be many effective limits to \( \tau_s \) - for instance, the more costly the subordinate’s
training, the lower the severity of punishment the superior will be able to credibly threaten.
Put bluntly, even the most ruthless superior will be reluctant to execute an expensively
trained tank or artillery commander.

\( b_f^i \): benefit to subordinate i of his unit winning the battle, regardless of whether he
participates. This can be thought of as a public good for all the subordinates. \( p_w - p_w^{-i} > 0 \), that
is, the marginal contribution of each subordinate to victory does not necessarily approach
zero – especially if there are only a small number of subordinates involved in each battle. A
subordinate may, however, be rewarded with commendation or promotion even if he does not
fight if the engagement is won and his superiors mistakenly believe that he contributed.

\( p_w^{-i} \): probability that the Army will win the battle if subordinate i does not fight.
\( p_w \): the probability that the battle is won if subordinate i fights hard. \( p_w \sim \text{logit}(-bN_f) \), where
and \( N_f \) is the number of other subordinates who fight.

\( \sigma \): the payoff to not fighting hard if the superior does not detect. \( \sigma = b_f^i p_w^{-i} - D(1 - p_w^{-i}) \)
\( \tau_L \): the punishment meted out by the other subordinates for not fighting hard
\( c_f \): the cost of fighting irrespective of whether one wins the battle or not (i.e., the risk of death
or injury)
\( P \): the cost of punishing shirkers
\( n \): the number of shirkers
\( A \): the benefit of approval from fellow subordinates for fighting hard
\( \tau_L \); \( \tau_L \) can be thought of as a schedule of informal social sanctions which subordinates mete out to perceived shirkers and can include ostracism, accusations of cowardice, threats to withhold future cooperation and even physical violence. If the subordinates form a cohesive unit and expect to interact with one another over a long period of time, \( \tau_L \) could potentially be very large and could make up for low values of \( p_S \); that is, if the subordinates can look out for and sanction one another for shirking then the ability of the superior to do so may become less important.

2.2.4.3 Peer Monitoring, Hard Fighting Equilibrium

There is a subgame perfect equilibrium in which subordinate \( i = \{ \text{fight} \} \), subordinate \( i = \{ \text{punish those who did not fight} \} \)

2.2.4.3.1 Conditions

I) \( \delta A - nP > - \delta \tau_L \)

\( \rightarrow \delta (A + \tau_L) > nP \)

\( \rightarrow \) The subordinate \( = \{ \text{punish shirkers} \} \) he fought hard.

Rewriting the terms as above shows the importance of the number of shirkers. Where this number is low, the costs of punishing those who do shirk is low.

II) \( b_f^{j|o} p_w - D(1-p_w) + A - nP + \delta A - c_i > 0 \)

\( \rightarrow \) The subordinate prefers to fight hard and punish shirkers rather than surrender.

III) \( b_f^{j|o} p_w - D(1-p_w) + A - nP + \delta A - c_i > (1-p_S) \sigma - \tau_L - p_S \delta \tau_S \)

\( \rightarrow \delta A + p_S \delta \tau_S > (1-p_G) \sigma - b_f^{j|o} p_w + D(1-p_w) - A + nP - \tau_L - c_i \)

\( \rightarrow A > ((1-p_G) \sigma - b_f^{j|o} p_w + D(1-p_w) - A + nP - \tau_L - c_i) / \delta) - p_S \delta \tau_S \)
→ The subordinate prefers to fight hard rather than shirk.

Given that the subordinate expects others to fight, because they will be rewarded, and to punish those who do not, he expects to gain approval for fighting and hence will fight too.

Or alternatively, substituting $\sigma = b_j^0 p_w^{-i} - D(1 - p_w^{-i})$

$\rightarrow A + \tau_i > (1 - p_G) \sigma - p_G \delta \tau_G - b_j^0 p_w + D(1 - p_w) + nP(\delta A) + c_i$

→ The subordinate prefers to fight hard

2.2.4.4. No Peer Monitoring, No Hard Fighting Equilibrium

There is also a subgame perfect equilibrium in which subordinate $i = \{\text{not fight}\}$, subordinate $i = \{\text{not punish those who did not fight}\}$

2.2.4.4.1 Conditions

I) $nP > \delta(A + \tau_i)$

→ subordinate $= \{\text{not punish}\}$ Other Officer $= \{\text{not fight}\}$

Clearly, the larger $n$, the number of shirkers, the more costly it is to punish them all.

II) $(1 - p_G) \sigma - p_G \delta \tau_G - b_j^0 p_w + D(1 - p_w) + nP(\delta A) > 0$

→ subordinate $= \{\text{not fight}\}$

Thus, the lower the benefits of victory in an engagement (if promotions have little to do with battlefield performance), the higher the number of people who will shirk, and hence the higher the costs of punishing those who do, which in turn drives up the number of shirkers in the following period. Thus not only does the promotion system of a broader funnel Army increase incentives to fight in itself, it also generates a critical mass of fighters in a given unit who can induce waverers to fight too. To illustrate this, suppose there are two types of individuals –
fighters and waverers, distinguished by having a differential cost for fighting $c_i$. The diagram below illustrates the different effects of a broad funnel Army with a high number of fighters and a narrow funnel Army with a lower number on these individuals’ propensity to fight.

![Diagram showing the effect of narrowing the funnel on the expected proportion of fighters/punishers](image)

**Figure 12: The effect on peer monitoring of moving from an open to a narrow funnel Army**

### 2.2.5 Why political leaders might choose to constrict the officer funnel

Given the malign effects of narrowing either funnel as outlined above, the obvious question is – why would any Head of Government deliberately choose politically motivated restrictions?

To answer this question, let us consider the motives of this Head of Government. This individual will be termed the ‘Executive’, to denote the generality of his office. The Executive represents any head of government, whether a President, King, Emperor, Prime Minister or Dictator. The Executive can set many of the parameters around which his Army is organized. As
per the standard assumption of leadership centric international relations, he chooses the Army’s organizational form so as to maximize his chances of remaining in office. His prospects for survival in office in turn could be threatened by either internal or external forces.

Internally, of course, the Army constitutes a major potential threat to his survival. The Army possesses the majority if not all of the country’s weaponry and are specialists in using it (we are leaving aside for a moment the question of parallel security establishments). Should an alternative leader emerge from within the military, therefore, he would constitute a more credible danger to the Executive than challengers from most other segments of society. This is what Peter Feaver refers to as the core ‘problematique’ of civil military relations (Feaver 2003).

External enemies, however, are certainly not a trivial source of threat to the Executive’s survival in office. Foreign imposed regime change did not begin with Saddam Hussein – Napoleon, Kaiser Wilhelm, the Ottoman Sultanate, the Nazis and Idi Amin all met their end not from an internal but from an external foe. As Hein Goemans and Giacomo Chiozza demonstrate, defeat in a war can have strongly negative consequences for a given leader’s survival in office (Chiozza and Goemans 2011).

The Executive must therefore organize his Army so as to maximize his chances of survival in office by simultaneously being able to fight off foreign threats while also abstaining from removing the Executive itself. The Executive’s ability to organize the Army how he pleases is of course constrained by the legacy of past choices. Armies take years to recruit and train properly. Individual officers take years to rise through the ranks. The Junior Officers and NCOs at the disposal of the current Executive may have been recruited and trained under his predecessor. They will train their successors. They in turn may have been trained by officers and
NCOs who were recruited and trained by the current Executive’s predecessor’s predecessor and so on. An Army’s levels of destructivity can change rapidly, especially in long, large wars where both casualties and radical changes in recruitment base can cause pre-war differences to narrow over time. However, the effects of past policies on current destructivity can linger for a long time. With this caveat in mind, let us examine the determinants of the Executive’s decisions.

To guard against external threats, the Executive needs an Army with a high level of skill which is motivated to fight hard, even in situations in which the Executive or his commanders cannot readily observe what their subordinates are doing. To do this, the Executive needs to be able to offer credible positive inducements to the subordinates to motivate them both to fight and to devote time and effort to mastering the military profession. As we have seen, labor market conditions and literacy levels are key contributing factors towards the Executive’s ability to achieve this.

To secure himself against internal threats, the Executive can rely on a number of devices which will be described below. However, many exogenous factors can render the baseline risk of a coup low, meaning that an Executive does not need to lay a great deal of importance on coup prevention in designing the Army’s structures. The latitude which these factors give the Executive in organizing his Army will be a very important determinant of destructivity. The precise nature of these factors will be outlined below.

To illustrate the connection between the micro and macro structures of the Army and the State, I will shortly outline a formal ‘supergame’ between the Executive and the Army. The formalization helps me to demonstrate with precision how the micro and macro level structures of the Army interact and to ensure logical consistency in my argument.
The central issue is the type of Army the Executive wants to have. The Executive can choose to screen his men for political loyalty on entrance to the Army and again at every stage as they are promoted up the ranks closer to where they can pose a personal danger to him. The cost of doing so, however, is twofold. First, it lowers troops’ incentives to acquire military specific skills. Why, a junior officer reasons, bother to read military manuals, military history, gain an understanding of other service branches or study for Staff College exams if promotions will go to political cronies anyway? Second, it lowers subordinates’ incentives to go above and beyond the minimum level of fighting effort observable by superiors when in combat. The ‘fog of war’ creates numerous opportunities for subordinates to advance the Army’s goals which are unobservable by superiors and hence involve an element of choice on the part of subordinates. If these opportunities are passed up, the Army’s destructivity is lowered. If rewards are not doled out on merit, passed up is precisely what these opportunities will be.

If, on the other hand, the Executive sets the Army’s recruitment policy so as to turn a blind eye to political loyalty in recruitment and promotion, the skill and aggregate effort level of the Army will be much higher. At the same time, however, doing so risks placing in senior military ranks individuals who may wish to remove the Executive and take over the Government themselves.

Thus the Executive’s choice can be expected to be governed by both ‘demand’ and ‘supply’ factors. ‘Demand’ factors relate to the state’s external security environment. Previous literature, especially in military history, has stressed the importance of these factors – such as the balance of power between one’s own state and one’s neighbors, the existence of natural barriers to conquest such as large bodies of water, or the existence of foreign allies. States surrounded by
rivals with higher populations or greater wealth, lacking allies and/or natural frontiers might be said to have a high level of ‘demand’ for destructivity.

‘Supply’ factors, by contrast, are those which allow an Executive to choose a more open funnel recruitment and promotion system without thereby incurring a severe risk of overthrow. Such factors are related to the internal domestic structure of the state. As foreign wars are relatively rare events, and often do not threat the hold on power of the current Executive, my contention is that the politics of domestic survival will take precedence in the Executive’s decision making calculus over the degree of external threat.

Formally, the supergame begins with the Executive. He must decide which kind of Army he would like to have. I shall term these Armies open (o) or screened (s).

The Executive cannot fully trust his Army even if he chooses a screened system, but the probability that it will mount a coup against him if he does choose closure is lower than if he does not. In the game, this is represented through a parameter $p_{1|s}$ - which is the Executive’s estimate of the probability that his Army is disloyal (which I shall call a Type I Army). The $i$ subscript represents the choice of the Executive as to the type of Army he will have, so that $p_{1|s}$ is the probability that he has a disloyal Army if he prescreens it. $p_{1|o}$ is the Executive’s estimate of the probability his Army is disloyal if he does nothing to pre-screen it. This parameter can therefore be thought of as the ‘baseline’ risk of a coup in the Executive’s estimation and plays a very important role in my theory. A low value of $p_{1|o}$ gives the Executive a great deal of leeway in his decision on how to organize the Army.
Once the Executive has made his decision as to how open the Army should be, the Army itself has the move. The Army has three discrete choices. It can mount a coup against the Executive and replace him with a challenger (C), who may or may not come from the Army’s own ranks. This choice is denoted \{c\}. At the other extreme, the Army can fight hard or \{f\}. Clearly, the preferred option from the point of view of the Executive is that the Army fight.

However, there does exist in this supergame a third option. The Army can shirk \{s\}. This option merits some more extensive discussion. Shirking can sometimes take very blatant and obvious forms – desertion and mutiny are two of the clearer examples. Yet shirking can also take on subtler forms which can also undermine destructivity without running all the way to open defiance. Subordinates can break off attacks against the enemy following only light resistance. They can retreat in the face of enemy attacks which more determined resistance might have stopped. In some cases, individual soldiers can incapacitate themselves through self-inflicted wounds or fraudulently reporting sick. Surrender to the enemy is another grey area. Many armies accept that under hopeless circumstances soldiers may surrender, but military penal codes and informal military norms have also stated certain levels of effort which a soldier must reach before he can legitimately surrender\(^1\). Surrendering without making these efforts would also be considered shirking.

Against an enemy over whom one has huge material and numerical superiority, victory might still be won with a reasonable level of shirking. A Senior Officer can plaster the enemy with air power, artillery and tanks if he does not believe that his troops will be prepared to fight at

\(^1\) A common standard is that if a soldier has run out of ammunition or has been wounded, he can surrender without being considered a shirker. Surrender without due cause was a specific offense in many twentieth century military codes – termed ‘desertion a l’enemi’ in French. See Military Executions During World War One, Gerald Oram, p32
close quarters but he enjoys massive material supremacy. Nonetheless, victory is more likely against any kind of enemy if the Army fights than if the Army shirks. Formally these two probabilities are represented by \( p_{v|f} \) and \( p_{v|s} \), with \( p_{v|f} > p_{v|s} \). My approach thus bears comparison with Peter Feaver’s principal-agent theory of civil-military relations, though I extend the approach to include explicitly the danger that the Army may overthrow the Executive and disaggregate the Army down into a series of principal-agent relationships from General all the way down to the humblest private. As in Feaver’s theory, the Executive is the principal with a senior military officer his agent. As seen above, I develop this theory by simultaneously extending it to situations in which each officer and NCO himself is the principal with his own set of agents.

If the Army chooses to mount a coup, then the Executive is deposed and suffers a cost of \( \psi \). This parameter is clearly severe and can run from imprisonment and exile to execution. A disloyal Army of Type I receives a payoff of \( \chi_{C}^{A_{1}} \), which it prefers to all other options. A loyal Army of Type II receives a payoff of \( \chi_{C}^{A_{2}} \), to which it prefers either to fight or to shirk.

If the Army does choose to fight or shirk then Nature has the last move and assigns victory or defeat to the Executive and his Army. These probabilities vary according to whether the Army fights or shirks and whether the Executive has chosen to have a screened or an open Army. The probability of victory given that the Executive chooses to screen the Army is denoted \( p_{v|s} \). The probability of victory is denoted \( p_{v|o} \) if the Executive chooses to have an open Army. At this stage, I will confine myself to noting that the two probabilities are different. This set of parameters \( p_{v|t} \) can be thought of as the Army’s skill level- the end result of the funnel outlined above.
If the Army does fight hard and the battle is won, each Officer receives a reward which I shall term $b_j$. For the moment, I will not formally decompose this term into its constituent parts. However, it can be thought of as the difference between the positive inducements for fighting hard times the probability of recognition minus the risk of death or injury if one fights hard on the one hand, and the cost of negative sanctions times the probability of detection if one shirks on the other. As we have seen, this parameter takes on different values depending on whether the Army is closed or not.

Finally, if the battle is lost, the Executive receives some cost $D^E$. This term can be broken into two parts. The first is the cost to the Executive if the enemy is intent on regime change - $\psi$ - multiplied by the Executive’s estimate of the probability that this is indeed the enemy’s goal, $p_1$. Note that this cost is precisely the same to the Executive as if he were removed from power by an internal enemy. The second is the cost to the Executive if the enemy has more limited aims – $\Sigma$ – times the probability that these more limited aims are the enemy’s true goal, $p_1$.

Here we can see the outlines of the Executive’s dilemma – if, as I shall argue below, closing the Army lowers $b_j$ and $p_{\psi|t}$ (the Army’s skill and motivation levels respectively), then the Executive runs a greater risk of defeat in war, which may result in his deposition, by choosing a closed Army. However, if the Executive chooses an open Army, then he runs a greater risk of having a disloyal Army. This highlights the importance of the determinants of $p_{e|o}$ – the baseline hazard of a coup which will be examined in Section I and which allow the Executive to ‘purchase’ more destructivity for the same risk of deposition. At the same time, an open Army with a large funnel of recruits is costly even to an Executive whose baseline coup hazard is low - this large number of recruits must be paid and motivate. This brings to light the importance of
\( p_{\nu|e} \) - the baseline probability of military defeat. Where this is low – because of weak neighbors, favorable geography, or powerful allies – an Executive may be tempted to forego the additional expense and risk of having a broad recruitment funnel.

The extensive form of the supergame between the Executive and the Army is displayed below, along with conditions and a graphical display of the Executive’s trade-off.
2.2.6 Open Army Equilibrium

2.2.6.1 Conditions

(I) \[ p_{v|f_0} f_j + (1 - p_{v|f_0}) D^A > \chi_c^{A_2} \]

(II) \[ p_{v|f_0} f_j + (1 - p_{v|f_0}) D^A > p_{v|s_0} b_j + (1 - p_{v|s_0}) D^A \]
→ Type 2 Army Fights

(III) \( p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A < \chi^A_{c1} \)

(IV) \( \chi^A_{c1} > p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A \)

→ Type 1 Army stages a coup

(V) \( (1 - p_{1|o} )[p_{v|f_0}V^E - (1-p_{v|f_0})D^E] - p_{1|o} \psi > (1 - p_{1|c} )[p_{v|fc}V^E - (1-p_{v|fc})D^E] - p_{1|c} \psi \)

→ \( p_{1|o} < [(1 - p_{1|c} )[p_{v|fc}V^E - (1-p_{v|fc})D^E] - p_{1|c} \psi - p_{v|f_0}V^E - (1-p_{v|f_0})D^E] /[p_{v|f_0}V^E - (1-p_{v|f_0})D^E + \psi] \)

→ The Executive judges the baseline risk of a coup \( p_{1|o} \) low enough to risk an open Army.

2.2.7 Screened Army Equilibrium

2.2.7.1. Conditions

(I) \( p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A > \chi^A_{c2} \)

(II) \( p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A < p_{v|s0}b^s_j + (1-p_{v|s0})D^A \)

→ Type 2 Army Shirks

(III) \( p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A < \chi^A_{c1} \)

(IV) \( \chi^A_{c1} > p_{v|f_0}b^f_j + (1-p_{v|f_0})D^A \)

→ Type 1 Army stages a coup

(V) \( (1 - p_{1|o} )[p_{v|f_0}V^E - (1-p_{v|f_0})D^E] - p_{1|o} \psi < (1 - p_{1|c} )[p_{v|fc}V^E - (1-p_{v|fc})D^E] - p_{1|c} \psi \)

→ \( p_{1|o} > [(1 - p_{1|c} )[p_{v|fc}V^E - (1-p_{v|fc})D^E] - p_{1|c} \psi - p_{v|f_0}V^E - (1-p_{v|f_0})D^E] /[p_{v|f_0}V^E - (1-p_{v|f_0})D^E + \psi] \)

→ The Executive judges the baseline risk of a coup \( p_{1|o} \) too high to risk an open Army.
Figure 14: The Baseline Coup Hazard

The diagram above represents in stylized form the determinants of the Executive’s decision whether or not to have an open Army. The two broken lines represent the Executive’s indifference curves for different baseline coup hazards (values of $p_{1|o}$). A higher intercept means that the Executive’s risk of a coup is high however he chooses to organize his Army, a lower intercept the contrary. Factors which shift the intercept up or down – that is, which allow the Executive to purchase more skill $p_{v|i}$ for a lower risk of a coup $p_1$ will now be discussed in the micro-game of Section (I).
2.2.7.1.1 \( p_{10} \) - The Baseline Hazard of a Coup

Which exogenous variables determine one’s baseline risk of a coup? The democratic triumphalist answer is regime type. Yet quantitative analysis has shown this to be overly simplistic (Powell, Pilster and Boehmelt) and it is not theoretically satisfying. There are two reasons why democracies in general may be less vulnerable to a coup than autocracy. Both have some merit, but they do not explain why democracies per se would have less to fear from a coup than autocracies.

The first is that democracies benefit such a large proportion of the population by providing public goods that it would be difficult for an undemocratic challenger to credibly promise anything better (BdM et al). Implicitly this suggests that potential coup plotters in democracies are deterred by the prospect of popular resistance by the majority of the population who have much to lose from a reversion to authoritarianism. Yet this ignores the large-scale collective action problem which the majority of the population face in organizing to resist a coup. In the event of a coup, it would surely be in the interests of every individual citizen to free-ride on the efforts of others to restore democratic rule while avoiding the risks themselves. Josep Colomb’s analysis of the attempted 1981 coup in Spain suggests this to have been precisely the case – even strongly pro-democracy unions and political parties did little to resist the coup plotters, who failed more because of the intervention of the King and the lack of support from other Generals than because of fears of popular resistance (Colomer 1995).

The second is that democracies are able to inculcate norms against coups in their militaries (Nordlinger 1977). In modern advanced democracies, coups are said to be literally unthinkable – officers would not want to mount them even if they could be reasonably sure of
doing so successfully. The few occasions on which any officers in advanced democratic countries such as the United States or United Kingdom actually aired the idea of mounting a coup – the so-called Business Plot against Roosevelt in 1933 and the alleged 1970s plot against Prime Minister Harold Wilson – their preliminary openings to ideologically sympathetic officers were contemptuously rebuffed. Indeed, many serious analysts doubt that the above plots even really existed as anything other than rumors.

Yet this explanation cannot account for why militaries in younger democracies do not appear to feel themselves to be so constrained. Both qualitative and quantitative evidence suggests that new democracies are not much less vulnerable to coups than new autocracies. One might consider much of the history of 19th and early 20th century France in this regard, or a number of Latin American nations. Indeed, in the early years of the United States itself, the Founding Fathers did not believe that the new Republic was invulnerable to a military takeover because they could inculcate democratic norms into the US Army (Federalist Paper 26). Rather, they looked to keeping the standing Army small relative to the overall population, maintaining parallel military organizations in the form of the National Guard and allowing the American people to bear arms (so as to minimize the qualitative gap between the Executive’s weaponry and that of the people).

Moreover, if advanced democratic nations are able to promote anti-coup norms in their militaries, it must be asked why they have found it more difficult to do so amongst allied armies whose officers they have trained. Many of the world’s most coup-vulnerable states have strong military relations with advanced Western democracies, even to the point at which coup leaders have trained or even served in Western militaries. Pervez Musharraf of Pakistan, for instance,
studied at Britain’s Royal Defence College\(^2\). His predecessor as military ruler of Pakistan General Ayub Khan not only studied in Britain but had held a commission in the British Indian Army during World War Two.

It is more likely, in fact, that it is the long-lasting stability of political institutions in advanced democracies, coupled with relatively good political and economic performance, which accounts for their coup invulnerability. Institutions which have persisted for centuries, and which appear to work well, can generate mutual expectations amongst military and civilians about the improbability of coups, which can acquire the status of deeply held norms. The importance of such ‘common knowledge’ has a long pedigree in political science – going back to Thomas Schelling’s Strategy of Conflict and being developed very extensively in Michael Suk-Yung Chwe’s Culture, Coordination and Common Knowledge. The bad news is that this process is not limited to democracies, but to any long-lasting and apparently successful regime, including monarchies and single party autocracies. It is as unthinkable for a General to replace a monarch whose family’s rule has endured for centuries as it is for him to overthrow the leader of an established democracy. To illustrate this process, I will now outline a simple decision theoretic model where a Senior Officer, whom I shall term J, must decide whether to participate in a coup.

Senior Officer J is part of an Army in which there are m officers. He derives a given level of benefit from the rule of the current Executive which I shall term $\chi^E$. This benefit could be personal monetary gain in the form of side payments and perks in addition to his regular military salary, or it could be more altruistic intangible goals such as national prestige. An Executive could very well offer a mixture of both – promises of a strong, well esteemed nation in addition to

\(^2\)http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/TrainingandExercises/RCDS/Events/PresidentPervezMusharrafReturnsToRcds.htm
personal side payments. Let us suppose that there is some Challenger – C – who offers a different level of benefit $\chi^C$ in the event of a successful coup. Suppose also that both the Challenger and the Executive threaten some punishment - $\psi^C$ and $\psi^E$ - to those who did not participate on their side in the event of a coup.

Senior Officer J has to decide whether to join the coup based on these parameters and on his own estimate of the probability that the coup will succeed, which I shall simply term $p$. $p$ is a function of the proportion of the other Officers whom J believes will participate if a coup is mounted. I will describe the form of this function shortly.

Senior Officer J will decide to participate in a coup if and only if:

$$ p \chi^C - (1-p) \psi^E > p \chi^E - (1-p) \psi^C $$

$$ \Rightarrow p > \frac{\psi^E - \psi^C}{\chi^C - \chi^E + \psi^E - \psi^C} $$

Given that Senior Officer J’s decision to participate in the coup is increasing in the probability that the coup will succeed, and this probability is increasing in the proportion of other Senior Officers whom J believes will participate, Coup should exhibit ‘tipping point’ like behavior. If J believes that there are very few other officers who will participate, then it is in his interests not to participate either. Given that the other Officers are reasoning likewise, the {no coup} outcome is a very stable equilibrium. The longer a given regime has been in place (y, for number of years a given constitutional structure has been in place), the less J believes other Officers will participate in a coup, partly because they believe that he believes that they will not participate and so on. The longer this process lasts, the more a coup comes to be seen as ludicrous or unthinkable. The best functional form for this relationship is the logitistic distribution as a
function of the number of other Generals whom General J believes will participate. This is displayed graphically below. The longer a regime is in place, the further to the left on the x-axis General J believes he is. This is represented by the black arrows in the diagram below.

Figure 15: The probability that Senior officer J will join in a coup

Let us introduce a further parameter, $\beta$, which represents the marginal effectiveness of each Senior Officer on the prospects for success of a coup. Formally, this then means that $p \sim \text{logit}(\beta(n/m))$. A high value of $\beta$ reduces the proportion of Officers who need to participate to make the coup a success, a low value increases it. $\beta$ in turn is affected by factors such as the complexity of government departments (which means that coup plotters must gain the support of individuals from many different complementary agencies), the dispersal of government power (multiple centers of power increase the proportion of Senior Officers who must participate), or the distance of the Officers from the center of the state. This again is displayed graphically below.
Let us term these factors which reduce the marginal effectiveness of each Senior Officer a. These factors work by shifting the curve to the right, thus increasing the proportion of Senior Officers a Coup Leader needs in order to succeed. Again, this is displayed graphically below.

![Graph](image.png)

**Figure 16: The proportion of participating Senior officers necessary for a coup to succeed**

Finally, the Senior Officer’s decision to participate is increasing in the difference between the Coup Leader’s offer and that of the incumbent Executive, as can be seen from rewriting the equation once again.

\[ \chi^c - \chi^E > (\psi^E - \psi^C - p(\psi^E - \psi^C))/p \]

\[ \chi^c - \chi^E \] in fact has two complementary effects on the probability of a coup’s success. First, suppose that Senior Officer J has some threshold \( T_j \) which represents the probability of success at which he will be willing to join a coup. An increase in \( \chi^c - \chi^E \) first lowers this threshold to \( T_j^* \) – decreasing the probability of success which Senior Officer j considers tolerable in order to participate in a coup. Yet suppose now that there is another Senior Officer k, whose
participation threshold $T_k$ is lower than $T_j$. Suppose also that $p$ is common knowledge to $k$ and $j$. If the increase in $\chi^c - \chi^E$ lowers $J$’s threshold to $T_j^*$, so that $J$ will participate in a coup, this increases the coup’s prospects of success in turn and so induces Senior Officer $k$ to participate too. This process is illustrated graphically below. The increase in $\chi^c - \chi^E$ lowers $J$’s threshold by $b$ to $T_j^*$, then $J$’s participation shifts $p$ by $c$ to a point above $k$’s threshold $T_k$.

![Graph](image.png)

**Figure 17: How random shocks can lead to coups**

This suggests that negative changes in the performance of the Executive can have dramatic effects on the probability of a coup. Moreover, it implies a number of potential factors which go into coup vulnerability. First, and most clearly, the worse the Executive’s performance in office the more attractive is a military coup. Economic crises and foreign policy reversals are two obvious variables which may thereby increase the Executive’s insecurity. These events can serve as the ‘spark’ (Kuran) which can ignite a sudden shift in the behavior of Senior Officers towards mounting a coup.
Second, the more complex the business of Government and specialized the economy, the less attractive a coup may become for military officers. The more success in Government requires skills beyond the usual purview of the military – running social services, communicating with and persuading a mass public – the lower the relative benefit to military officers of military rule.

Alternatively, the more/less the current Executive and the Senior Officers are perfect substitutes, the more/less vulnerable is the regime to a coup. Specifically, in military regimes or personalist autocracies, the Executive possesses no particular perceived legitimacy or skills to set him apart from his Senior Officers, hence substitutability and coup vulnerability are both high. By contrast, in single-party regimes or democracies, political leadership requires oratorical, negotiation and persuasive skills which military officers often lack. Similarly, in long-established monarchical regimes, for a potential ruler to be considered viable by the understanding of other actors in society, he would need to possess a personal blood tie to the royal family, which of course most Senior Officers would lack.

A further exogenous determinant of $p_{cl}$ is less immediately and intuitively obvious – the size of the Army. To illustrate this, let me present an organizational chart of a typical Army. Although the specific ranks are based on the US Army of World War Two, this chart broadly corresponds to how most modern Armies are organized – for instance, the Iraqi Army under Saddam differed from this model only in having an intermediate unit (a *ra’il*, or troop) commanded by a *mulazzim* (or 2nd Lieutenant) between the platoon and company level (al-Marashi and Salama 2008).
Figure 18: A representative military hierarchy

Each Platoon has 50 enlisted men and one Lieutenant
Each Company has 150 enlisted men, 3 Lieutenants and 1 Captain

Each Batallion has 750 enlisted men, 15 Lieutenants, 5 Captains and 1 Lieutenant Colonel

Each Brigade has 3750 enlisted men, 75 Lieutenants, 25 Captains, 5 Lieutenant-Colonels and 1 Brigadier

Each Division has 15,000 enlisted men, 1 Major-General, 4 Brigadiers, 20 Lieutenant-Colonels, 100 Captains, 300 Lieutenants

Each Corps has 45,000 enlisted men, 1 Lieutenant-General, 3 Major-Generals, 12 Brigadiers, 60 Lieutenant-Colonels, 300 Captains, 900 Lieutenants

Each Army has 90,000 enlisted men, 1 General, 2 Lieutenant-Generals, 6 Major-Generals, 24 Brigadiers, 120 Lieutenant-Colonels, 600 Captains, 1800 Lieutenants

Each Army Group has 180,000 enlisted men, 1 Field Marshall or General of the Army, 2 Generals, 4 Lieutenant-Generals, 12 Major-Generals, 48 Brigadiers, 240 Lieutenant-Colonels, 1200 Captains, 3600 Lieutenants.

Now organizing a coup clearly requires a high degree of trust in one’s fellow plotters. Approaching an individual to ask if he would be willing to participate leaves one open to the risk of being reported to the state security apparatus and then imprisoned or even executed. One must therefore have a high degree of trust in the other plotters whom one wishes to approach. It follows from this that the initiators of a coup plot will be reluctant to involve individuals whom they do not personally know well. Social psychology posit is that the number of people any one individual can know well is bounded at approximately 150 people – the famous ‘Dunbar Number’ (Dunbar 2010)

Returning the organizational chart above, it therefore follows that the largest number of people that a given enlisted man could know well would be approximately one company of 150 men, only .00083 of the Army as a whole and consequently not even nearly enough to mount a successful coup (Statesman’s Yearbook 1913). As noted above, this is why coup proofing has
much less effect at the very lowest levels of command – the NCO corps. Even an insecure Executive has little to fear from a Sergeant – the Sergeant is rarely in a position within the Army’s overall social network in which he can plot a coup.

Moving slightly further up the hierarchy, each Lieutenant would need to know at least the Captain he reports into plus the 50 enlisted men in his platoon. This leaves a maximum of 99 other Lieutenants with whom he can coordinate collective action.

Each Captain needs to know well at least the Lieutenants who serve underneath him and the Lieutenant Colonel he reports to. This leaves another 146 Captains (at most) with whom he can coordinate collective action.

The Lieutenant-Colonels, in turn, need to know the Captains who report to them and the Brigadier they report into. This leaves 144 other Lieutenant-Colonels whom they could potentially know well.

The Brigadiers would need to know the Lieutenant-Colonels who report to them (5) and the 1 Brigadier to whom they report. This would leave another 144 Brigadiers, approximately, who could form part of their personal circle.

The Major-Generals would need to know their 4 subordinate Brigadiers and 1 Lieutenant General, leaving a potential 145 other Major-Generals to whom they could be personally close.

Of course, this model represents something of a simplification. Staff Officers, for instance, would include in their social circle many individuals of a rank much higher than their own. On the other hand, newly promoted Officers would probably have much closer personal ties with the rank from which they had just been promoted than the one into which they had moved.
Moreover, many officers may like to maintain personal relations with other officers one or two ranks below them in the hierarchy. For instance, a Brigadier may wish to know some of the Captains in his Brigade – in part to help him monitor and control the Lieutenant-Colonel. Finally, of course, all individuals will probably have many social contacts outside of the Army, including spouses, family and other friends in civilian life. If anything, then, the model I presented above represents a slight overestimate of the number of peers a given officer can know.

The point is that at each stage in the hierarchy, the number of subordinates and superiors with which a given soldier must interact decreases and hence the proportion of the total number of his peers he can know well enough to engage in risky collective action like coups increases.

Now let us run some numbers.

An Army with one Army Group will contain 180,000 enlisted men, 3600 Lieutenants, 1200 Captains, 240 Lieutenant-Colonels, 48 Brigadiers, 12 Major-Generals, 4 Lieutenant-Colonels and 2 Generals. An enlisted man could know at most .00083 of the other enlisted men, a Lieutenant only 2.75% of the other Lieutenants, a Captain 12% of the other Captains, a Lieutenant-Colonel 60% of the other Lieutenant-Colonels, and a Brigadier and upwards all of their peers.

An Army with ten Army Groups, by contrast, would have 1,800,000 enlisted men, 36,000 Lieutenants, 12,000 Captains, 2,400 Lieutenant-Colonels, 480 Brigadiers, 120 Major-Generals, 40 Lieutenant-Generals and 20 Generals. Now the Lieutenants know only .0275% of their peers, the Captains 1.2%, the Lieutenant-Colonels 6%, the Brigadiers 30% of their peers and the Major-Generals potentially all of their peers.
In an Army with twenty Army Groups, there are now 3,600,000 enlisted men, 72,000 Lieutenants, 24,000 Captains, 4,800 Lieutenant-Colonels, 960 Brigadiers, 240 Major-Generals, 80 Lieutenant-Generals and 40 Generals. In this Army, the Lieutenants know .01375% of their peers, the Captains .6%, the Lieutenant-Colonels 3%, the Brigadiers 15%, the Major-Generals 60% and the Lieutenant-Generals and above all of their peers.

Could a small group of plotters, like the Lieutenant-Colonels in the 3.6 million man Army, nonetheless feel confident enough to mount a coup? Given that the Executive is likely to reward those who helped to put down a coup and punish even those who stood aside, it is likely that coup plotters will assume that those outside their circle will resist them unless they know otherwise. This will especially be the case in a strong authoritarian regime with widespread preference falsification (Kuran 1995) – support for the Executive in the rest of the Army will appear to plotters to be very strong, even if in private it is not.

It follows from this that the larger the army, the lower the baseline risk of a coup $p_{c|o}$. This appears at first blush to contradict the classical Anglo-American distrust of large standing Armies, yet this concern is subtly different. A standing Army which is large relative to the population was feared as it would make it easier for the Executive to repress the population, not because it would make it easier for a military officer to overthrow the Executive. A large standing Army should make it harder for a military officer to coordinate with sufficient collaborators to overthrow the current Executive. Quantitative literature on coups in fact bears this out – absolute Army size (what I shall call $n_A$) has a strong and significantly negative effect on both coup attempts and coup success (Powell 2012). There are two reasons why this makes sense.
First, quite simply, the number of ranks whom the Executive must watch out for decreases. An Executive in a 100,000 man Army must watch out for all ranks from Lieutenant-Colonel upwards. In a very large Army, by contrast, only a small number of people at the top need to be monitored, bribed or otherwise suborned. Second, the further up the ranks the potential coup plotters are to be found, the further they are from the Junior Officers and enlisted men. Suppose a Major-General in a very large Army wishes to mount a coup. Even if the other Major-Generals are on board, they must wonder if the Brigadiers will obey the order from them, the Lieutenant-Colonels from the Brigadier, the Captains from the Lieutenant-Colonels, the Lieutenants from the Captains and the enlisted men and NCOs from the Lieutenants. In order to gauge this, they will have to rely on second, third, fourth, fifth or even sixth hand hearsay. Their information will be of the sort – “My Brigadier told me that his Lieutenant-Colonel told him that the Junior Officers and men would move against the regime if given the order”. Not only is such information less and less trustworthy the further away from one’s own first hand acquaintances it goes, but also the more and more soundings have to be taken lower down the ranks, the likelier the plot is to be discovered.

In a smaller Army, the Senior Officers can potentially know more of the lower ranks while still knowing a good proportion of their peers. For instance, if \( n_A \) is approximately 100,000, a Major-General could, in addition to knowing his immediate subordinate and superior and all of his peers, also know personally over half of the Lieutenant-Colonels.

This does not mean that officers will only believe other soldiers will participate in a coup if they hear it first-hand. In fact, if this were the case, we would see coups only in the very
smallest of armies – those scarcely bigger than company size. Two factors make coups possible even if no one participant knows all of the others personally.

First, second or third hand information is less reliable than first-hand information, but it is better than no information at all. For instance, if a General hears from his Staff Officer that the Captains in the Staff Officer’s old regiment are prepared to join a coup, then he will rate the chances of their participation higher than if he had no information about them at all.

Second, in any army, there will be a certain level of expectation that orders from superiors will be obeyed. This need not necessarily mean that the superiors’ orders will be obeyed because the subordinates agree with them. It could simply be that the subordinates believe the other subordinates will also obey. In the limiting case, if a Brigadier believes that the Captains in a battalion will obey the Lieutenant-Colonel with certainty, then he only needs to know the views of the Lieutenant-Colonel, not those of each Captain personally. Put differently, knowing the views of a given officer’s superior does provide some information about the likely behavior of that officer, even if one does not know that officer’s own views. That said, the expectation of obedience in the event of a coup must be lower than the expectation of obedience to orders approved of by the civilian authorities.

The point about these two qualifications, however, is that they do not invalidate the general proposition that coups are less likely the larger the Army.

First, although second and third hand information is better than no information at all, the further one is removed from the source of the information, the less credible that information is. Moreover, the bigger the Army is, the further removed one will be from the sources of
information one would have to trust in order to believe that there is a critical mass of officers to mount a coup.

Second, there is no reason to believe that the ‘obedience norm’ should correlate with army size. That is, the probability that a subordinate will obey any order from his immediate superior will not necessarily be any different in a small army than in a large one. Consequently, it will not ‘cancel out’ the effect of Army size on the likelihood of a coup.

The foregoing analysis suggests that Executives will have a very low baseline risk of a coup if they are already long-lasting, have shown a relatively good policy performance, have political systems in which Senior Officers are very imperfectly substitutable with the Executive or simply have a larger Army. In such systems, \( p_{cl} \) will be low, and hence the Executive can more easily afford to move to a more open Army. Formally, \( p_{cl} = f( n/m(y), \chi^E, \beta, n_A ) \).

2.3 Alternative Theories

I will now outline the logic of some of the alternative theories, stating how they differ from mine and what contrasting predictions they make about military effectiveness. These contrasting predictions can be used in the case studies and quantitative work to come to assess the power of my theory against competitors in the literature.

2.3.1 External Threat

Realism begins from radically different premises from my own micro-motives theory. Where I have sought to break down the state into the Executive and his Army, and to break the Army itself down into its component ranks, realism posits the entire state to be a unitary, security
seeking actor. There are numerous possible ways to interpret this in the context of the games I have set out.

The first is that the Executive will always place greater emphasis on external security threats \((p_1 \psi + p_2 \Sigma)\) than on internal ones, so that he will choose the more effective open Army over the less effective closed one. In the presence of a very compelling external security threat, realism’s predictions about the Executive’s behavior converge with my own. The difference is when the internal threat is larger than the external one. Say, for instance, a state is engaged in a war with its rival but the rival’s aims appear to be limited to some non-essential piece of territory. Say also that the state has a long history of coups, so that the Executive feels himself acutely vulnerable to a military overthrow. In this case, my theory would suggest that the Executive will choose the less effective closed Army, accepting a greater risk of losing the inessential territory in order to protect himself from a coup. Some variants of realism would suggest that the state will always maximize its security. A state which keeps on losing small increments of power over a sustained period of time will eventually suffer a death by a thousand cuts. A state should therefore seek to have the best Army it can, even for seemingly small wars. Consequently a more effective open Army should be chosen even if this may increase the Executive’s risk of losing power. Why the Executive would decide to place the long term benefit of the state ahead of his own is not clear in this case. Nationalism may provide the key – just as nationalism, in this view, can convince the soldier to lay down his life for his country, so it may also convince an Executive to risk his political life for the good of his country.

Alternatively, other realists may claim that states’ aims under anarchy can never be presumed to be limited – in the terms of my game, \(p_1\) approaches one and \(p_2\) approaches zero. An
Executive must always assume that his opponent in a war intends to invade his home territory and depose him given the opportunity. Consequently, undermining the effectiveness of the Army by closing off recruitment and promotion would simply bring with it the very thing the Executive seeks to avoid – loss of power, only this time at the hands of an external foe rather than one of his own Generals.

An alternative realist hypothesis is that the Executive may very well, for domestic reasons, choose not to create an effective Army. However, if the Executive does make this choice, then his state should be selected out of the international system and replaced by one which can. This natural selection process constitutes one good reason why the realist assumption that the state is a security-seeking unitary actor may hold good in most cases even if it appears to ignore the domestic politics which affect security policy. States which behave like unitary actors by creating effective armies will survive and prosper, while states which do not will fall by the wayside.

This variant of realism is convincing but incomplete and so my theory is complimentary to it. It is incomplete because it simply claims that states will create effective armies or go to the wall, without saying how any given state might actually accomplish this feat. Michael Desch, for instance, talks about the ‘structural imperative under the anarchic international system’ to create an effective military (Desch 2008), without saying just exactly how they manage to translate these incentives into action. As Albert Hirschmann said in Exit, Voice and Loyalty, saying that businesses which do not maximize profits will go bust is not much help to a given businessman who wants to know how his business can survive and prosper (Hirschmann 1970). My theory can be seen as the military analogy.
2.3.2 Democratic Triumphantism

The democratic triumphalist view is composed of many elements. However, they all point towards democracies being able to fight more effectively than autocracies. Autocracies, in this view, ought to be more likely to create closed Armies for fear that the military will overthrow the Executive. Autocratic armies, moreover, should fight with lower levels of initiative than democratic states, as this will be discouraged by the Executive and the Senior Officers. Autocracies should have a poor reputation for treating prisoners in contrast with democracies, and this should encourage autocratic troops to surrender more frequently than democratic ones. This is because autocracies cannot extend to PoWs rights which they deny to their own citizens. Autocracies also should be less likely to promote on merit than democracies.

My approach has some similarities with the democratic triumphalist school. Autocracies which are relatively new, have a history of instability including numerous prior coups, and whose Executives have displayed a poor public policy performance will indeed be very vulnerable to coups and so will tend to create closed armies. Moreover, Executives bordered by other weak states (whether democratic or autocratic) will simply have less of a need to risk the creation of a highly effective army.

By contrast, more established autocracies, with large armies and little or no history of coups, and relatively good prior policy performance, will have more leeway to establish an open Army. If their external security situation is tough, moreover, they will have more need to do so. All states, moreover, have the same incentives to treat PoWs well. Keeping PoWs against their will behind barbed wire for several years is hardly ‘extending rights denied to your own
population’, especially given the clear incentives autocratic states have to induce their enemies to surrender.

Moreover, states with higher levels of labor market rigidity and government spending will also have a better ability to recruit, retain and motivate good military officers. High barriers to entry to civilian alternatives create a larger pool of applicants for the officer corps. Difficulties of moving between professions improve retention. A large state sector provides an obvious arena to soak up retired military personnel, helping to solve the ‘up or out’ problem which bedevils many armies. Of course, these factors need not be limited to autocracies, but the key to the effectiveness of many autocratic armies may well lie here.

Autocracies may have other advantages. It has been established that autocracies are more likely to operate conscription and to have higher peacetime defense spending. This could create a larger pool of trained manpower in times of war. Supporters of democratic triumphalism have tried to downplay this factor by claiming that this defense spending is wasted on rent-seeking by officers. But if officers enjoy high rents, this ought ceteris paribus to encourage military recruitment and hence destructivity. The analogy with rent seeking by civilian industries is flawed – in Buchanan’s classic formulation, rent seeking damages productivity by encouraging firms to engage in political lobbying rather than competing with other firms in open markets through innovation. Given that even democratic armies do not usually operate in a competitive market to provide national security services to the state, it is not clear why this causal mechanism would apply to them.
Democratic triumphalism would find it difficult to explain why an autocratic state could produce a more effective Army than a democratic one. They are reduced to the view that effective autocratic states are rare outliers. In the case studies I will illustrate how my theory can do better.

2.3.3 General Human Capital

Many analysts such as Michael Desch (Desch 2008), Stephen Biddle and Stephen Long point to wealth and human capital as key determinants of military effectiveness. Biddle and Long write:

“Illiterate mechanics will have great difficulty maintaining high-performance engines; troops with no meaningful formal education will find it harder to draft or carry out instructions for moving thousands of soldiers over multiple routes to converge on a distant point at the same moment. Whereas developed states such as Britain or the United States will enjoy a pool of educated, able-bodied people large enough to satisfy such demands for both the military and the civilian economy, such skills are far scarcer in developing countries, which may have greater problems in finding enough talent to fill all pressing needs. In states such as Liberia, for example, there may simply not be enough literate, trainable people to field a mass military capable of absorbing complicated technology effectively” (Biddle and Long 2006)

This theory is certainly plausible. Indeed, large parts of my own theory are indebted to the speculative passages from Biddle and Long’s article above. However, human capital is a very broad and far reaching term which could encompass everything from basic reading and writing to learning the periodic table, literary classics, world history, foreign languages, elementary biology or information and communication technology. While some of these subjects would appear to have an obvious military application, with others this is less clear to say the least. It is also not completely apparent why better general education would actually make one a better soldier. Would a private who has read Shakespeare be more able to storm a machine gun nest than one who has not? Might not more highly educated soldiers be more prone to doubts, anxiety and
insubordination? How much education does one need to be able to strip and reassemble a machine gun or take cover when under fire?

My theory offers a refinement of Biddle and Long’s views on human capital and destructivity. Formal education does not, in my view, have to be very high in order to produce good fighting soldiers. They simply need to be able to read and write to a reasonably high standard. This is not to absorb training in the sense of a series of rote physical drills (for instance, weapons maintenance or target practice). Rather it is to allow the Army’s lowest level leaders – the NCO corps – to benefit from formal tactical military education (e.g., through written manuals and examinations) which allows them to devise their own solutions to novel problems they encounter on the battlefield and to understand the broader operational goals of the engagements they are fighting in, so that they can tailor their actions accordingly.

There are, as the above passage makes clear, many alternative causal mechanisms which could be at play. Low levels of literacy might be thought to affect the officer corps as well as the NCOs, making logistics and large scale maneuver very difficult. Moreover, it could also affect the civilian state’s administrative competence, making it harder to raise, equip and transport large armies. Both of these potential mechanisms however appear to be contradicted by Biddle and Long’s own statistical work, which already controls for the amount of men and materiel an Army has brought to a given engagement. Poor maintenance of high tech equipment may also be a problem, but historical evidence appears to indicate that deficiencies in military effectiveness hampered the comparatively low tech infantry of low literacy states as well as the higher tech armor, artillery and air branches. In fact, as analysts such as Kenneth Pollack note, in many low literacy Arab armies, the infantry were even more ineffective than more technologically oriented
service branches (Pollack 2002). Finally, it should be noted that there is not necessarily a positive and linear correlation between the technological sophistication of one’s weaponry and the amount of education needed to use it properly. Technological advances often consist in making equipment easier to operate, reducing the level of education the end user requires. One might, for example, consider the proficiency which very poorly educated Afghan mujahideen deployed high tech Stinger missiles against the Soviets.

In short, then, my argument represents a refinement of previous human capital based theories on military effectiveness. There are however many other distinct alternative mechanisms which will be tested against my own. These include superior logistics, weapons quality, state capacity and technological maintenance.

2.3.4 Wealth

Closely related to the human capital arguments is the claim that it is quite simply wealth which holds the key to destructivity. The potential causal mechanisms at play here are even more expansive than with human capital.

It could be that wealthy states are better able to afford superior weaponry, to pay their troops more, to provide them with superior medical care or to pay for professional military establishments which foster the accumulation of skills.

All of these alternatives are plausible, yet are contradicted by a variety of factors. For one thing, as the French example in the introduction illustrates, superior weaponry does not always win out, especially if confronted by superior training and tactics. Even some of the most obvious, ‘most likely’ cases of weapons quality winning battles – the conquest of colonial Empires by
European states in the eighteenth and nineteenth centuries, have actually been challenged by
many historians. Indian Armies resisting the conquest of their country by the British are now
thought to have deployed weapons of similar or even superior quality. For instance, British troops
brought Indian cannon back to Britain to allow British iron manufacturers to reverse engineer the
Indian manufacturing processes behind them. Even some African states were armed, at least
initially, with muskets indistinguishable from those of the European states attacking them.

Biddle notes that even very high tech weaponry loses much of its effectiveness against an
enemy which knows how to use effective dispersion and concealment.

The medical care alternative is intriguing, but this would not explain the superior tactical
maneuver and low level leadership shown by the best Armies in the military history of the last
century.

Finally, although professional military establishments are crucial in fostering military
skill, it is not apparent that these are limited only to wealthy states. Professional military
establishments are found in many states, poor or rich. Indeed, as the al Qaeda training camps in
Afghanistan pre 9/11 show, they are not even necessarily restricted to states.

2.3.5 Alternative Coup-Proofing Theories

Several other mechanisms have been proposed in the literature to link coup-vulnerability
and military effectiveness. Hoyt, for instance, cited confused chains of command in his study of
Iraq (Hoyt 2007). Others such as Kenneth Pollack have pointed to the rotation of military officers
as the key intervening variable (Pollack 2002). Pilster and Boehmelt, for their part, cited the
existence of parallel military organizations as a crucial link (Pilster and Boehmelt 2011). Here I
will briefly flesh out the causal logic of each claim, show where it differs from mine and outline contrasting predictions.

Confused chains of command could clearly damage military effectiveness by increasing the danger of coordination failures amongst subordinates. Where there is disagreement between the subordinates, the superior can prevent such failures by ruling on one side or the other. Where there are two superiors, however, the coordination problem is reproduced at a higher level.

If confused chains of command were a key intervening variable between coup-proofing and military effectiveness, we should expect to see frequent coordination failures between units in coup-vulnerable armies leading directly to battlefield defeat. My contention, however, is that it is insufficient levels of military skill and lack of incentive to display initiative which are the main issue. If narrow funnel militaries do provide credible incentives for initiative but fail nonetheless due to coordination failures, this would count for the confused chains of command hypothesis and against mine. If, however, confused chains of command are abolished in wartime and inefficiencies still persist, this would count against this alternative theory.

Rotation could be the major intervening variable between coup-proofing and military effectiveness. Autocrats frequently do rotate military officers around commands in order to prevent them from forming close bonds with their subordinates which could be useful in a coup. When it comes to fighting, of course, these bonds can be very important – subordinates need to trust one another in combat situations, and in turn need to trust that their contributions will be correctly and fairly assessed by their superiors. However, as we have seen in Section III, the ranks which the Executive needs to fear are usually far higher in the ranks than those on the frontline. Rotating Lieutenants might be very damaging. Rotating Majors might also be damaging
although somewhat less so. However, if the Executive is rotating Brigadiers or Lieutenant Generals, it is less clear why this would damage the fighting motivation or skills of those much further down the military hierarchy who may have no personal contact with them.

If rotation were the key issue, then we should see frequent rotation of officers prior to decisive military defeats (provided, of course, that the other side is not also doing the same thing). We should expect to see this occurring far enough down the ranks to impact subordinates directly. We should also see (if such data can be gathered), subordinates expressing opinions to the effect that such instability in command makes it hard to gauge whether they can trust their superiors to reward them properly for their efforts. My contrasting prediction is that rotation will take place at too high a level to play a large enough role in the day-to-day calculations of subordinates.

Finally, the existence of parallel military organizations has gained much popularity in the literature as a key linking factor between coup-vulnerability and military effectiveness. However, the causal mechanism is still somewhat nebulous.

One obvious way in which parallel military organizations could hamper military effectiveness is through force deployment. By this, I mean the Executive creates a parallel military organization to defend himself from the regular Army, gives it the best weapons and training and then holds it back from the front.

This theory is plausible. My theory, however, counters that a closed military will be ineffective whether it is split into parallel branches or not. If an Executive, however, does commit his parallel Praetorian organization to the front and they are still less effective than the enemy, this would count against this variant of the parallel military organizations theory.
A second reason why parallel military organizations would reduce destructivity is by fostering a variant of inter-service rivalry. If the Executive gives his Praetorians better pay and conditions than the Regular Army, then this may again hamper the bonds of trust which can be crucial to battlefield performance. Praetorian and Regular Army units may fail in their objectives because they do not trust the other to help them out if they are in need.

Theoretically, this argument is unconvincing. If the Executive integrates the two units only at a very high level (say Corps level), then only a tiny proportion of the two organizations will find themselves fighting alongside small units from the other organization. The vast majority of Praetorian companies will fight next to other Praetorian companies and the same with the regular Army’s units. Even if the two organizations do not trust one another, for the most part this should not be a major problem on the battlefield.

If this mechanism is true, we should expect to see the worst defeats for a closed Army on the hinges between the Praetorian and regular Armies. We should also expect to see evidence of distaste between the two branches – failures by one branch to help out the other in need. Evidence of cooperation between Praetorians and Regulars, or camaraderie, would count against this theory.

Finally, Pilster and Boehmelt claim that parallel military organizations should inhibit the ability of military officers to gain cross-service training and experience. For instance, infantry officers should have difficulty gaining experience with artillery or armor.

This too is unconvincing. If this were indeed an issue which arose from parallel military organizations, then why would the Executive not ensure that each organization contained all arms within itself? Could not a Praetorian infantry officer gain experience with the Praetorian artillery?
or Praetorian armor? In fact, if the Executive wishes to play parallel military organizations off against one another, it would seem self-defeating to denude one of the organizations of one type of arm. If, for instance, the Regular Army have the tanks and artillery and the Praetorians only infantry, then the Praetorians would not be a very effective obstacle to the Regular Army’s deposing the Executive. By contrast, if the Praetorians have the heavy weaponry and the Regular Army only infantry, then the Praetorians become a major threat to the Executive’s rule themselves. One might counter that if the total armed forces are very small it may not make practical sense to divide combat arms between organizations. My point is simply that – even if one starts from Pilster and Boehmelt’s premise that the Executive cares first and foremost about internal threats – there are very good reasons to doubt that the existence of parallel military organizations would imply a lack of cross-branch training across the board.

Still, Pilster and Boehmelt’s theory and statistical findings are intriguing and merit testing as an alternative hypothesis. If their theory is true, then we should expect to see particular types of arms concentrated in one of the parallel organizations and not found in others. Officers from one organization should not receive training in the use of arms from other organizations even if they both fight under the same flag. Consequently, both Praetorians and Regulars should demonstrate clear difficulty in coordinated all arms fighting. Evidence that Praetorian organizations and the regular Army contain all arms, or that their officers are not deficient in combining different arms together, would be disconfirming for their theory.

In short, then, in my theory parallel military organizations in and of themselves play little role in military effectiveness. In a closed military with two parallel organizations, neither organization should be as good as an open military. In an open military with two parallel
organizations (think the US Army and the US Marine Corps), by contrast, both organizations would be better than a closed military which had only one organization.

### 2.3.6 Culture

Many theories of military effectiveness rely on culture as a key explanatory variable (Caustillo 2012, Reiter 2007). Culture is an intuitively appealing explanation for variation in military effectiveness, but the nebulousness of the term makes it difficult to nail down a causal mechanism. To their credit, however, constructivists have attempted to spell out precisely what they understand by culture and how it can shape military effectiveness.

Reiter, in his study of Japanese fighting effectiveness in World War Two, talks of an internalized set of norms which lead an individual to prefer sacrificing his life for the good of the nation. Similarly, Caustillo claims that collectivist societies socialize their members into preferring the good of the collective over their own personal benefit. Seen from this perspective, the collective action problem inherent in fighting disappears through an individual preference shift.

Many military historians have stressed the importance of culture – Victor Davis-Hanson has spoken of a “Western Way of War” sharing certain characteristics such as a propensity for face to face combat (Davis-Hanson 2000). Hanson, moreover, claims that this culture confers great military advantages for Western nations – ‘why the West has won’ (Davis-Hanson 2002). In this view, political and military leaders making strategic, operational and tactical decisions rely on a certain frame of reference provided by their culture. For instance, a US President reforming the US Army will be most likely to look to his own nation’s history for guidance, a little less
likely to look to other culturally similar countries such as Britain or Germany, and much less likely to look to examples from, say, ancient China or medieval India. Conversely, a Chinese leader will look first to Chinese history, then to that of other Asian nations and only lastly to Western examples (Johnston 1996). A Chinese leader could, consequently, be trapped within a less effective frame of reference simply because better Western examples are less familiar to him, or because he does not believe that Western examples could be appropriately transplanted into China.

My view on culturalist explanations for destructivity echoes many of the criticisms of Patrick Porter’s Military Orientalism. Analysts such as Castillo and Reiter could be accused of taking war time propaganda at face value. In wartime, Executives always have incentives to demonize the opposing side – for democratic states this can take the form of describing enemy as hive-minded, irrational conformists, whereas for autocracies, this can lead to the claim that their enemies are selfish individualists with no concept of self-sacrifice for the greater good. It does not necessarily follow that these accusations have any basis in truth (Porter 2009).

Executives may have incentives to claim to both external and internal audiences that they have socialized their peoples into accepting death for the good of their country. Such a claim if believed by foreigners will enhance deterrence. Such a claim can also have a positive tipping effect on one’s own soldiers – if you believe that your colleagues have been socialized into not fearing death, then the risks to you of fighting are lower because you can count on your comrades to help you, and the risks of shirking are higher, because you would be the only shirker and so could more easily be detected and punished. More subtly, sometimes outside observers can create idealized depictions of foreign societies as a means of contrasting their alleged virtues with the
shortcomings of their own society. For instance, Porter points to early twentieth century conservative British military officers who used the example of Japan to expose the allegedly debilitating effect which urbanization and liberalism were having on British fighting spirit. Finally, both Executives and superiors may have incentives to stress culture in order to distract attention from the cruder means they may have used in order to motivate their men. A General who shot hundreds of his own soldiers to encourage the others to fight is unlikely to advertise the fact in his post-war memoirs (Pinker 2011). Instead, he is likely to claim that his men went gladly to their deaths because they had been socialized from childhood into believing that it was glorious to die for their country/ideology/religion.

My theory is not opposed to the importance of culture – defined as extra-rational benefits which an individual can be socialized into valuing. In fact, peer esteem plays an important role in my theory and cannot simply be reduced to material incentives. Moreover, I propose to flesh out and test cultural theories more precisely. For instance, it could be that in societies which are relatively immobile – that is, where an individual can expect to spend most of his life in the same small area interacting with the same people, social shame and stigma may prove a more effective deterrent to military shirking than in a society where an individual can expect to change jobs, location and social networks frequently. Both the sociological theory of Durkheim (2006) and the empirical work of Costa and Kahn (2008) would suggest this to be the case.

However, my theory differs from those of Caustillo and Reiter in that the individual soldier is still considering his own self-interest rather than the interests of the collective. The soldier in this view cares about his esteem, how he is viewed by his comrades and his community and very little about the good of the state as a whole. Given the choice between a war which his
country loses but in which he emerges with enhanced esteem and one in which his country wins but he derives no such personal benefits, the average soldier will choose the former.

### 2.3.7 Conclusion

Destructivity, then, is above all a function of two things – the knowledge and incentives of the lower level leaders in the Army. Knowledge, in turn, results from subordinates’ investment of time and effort in learning about the military profession, something they will do only in the credible hope of a reward. Thus knowledge too is a function of the Army’s internal incentive structure. An Army with high levels of destructivity requires a broad pool of talent to recruit and promote from. It also requires a credible commitment to promote and reward people who master their trade and go above and beyond the call of duty on the battlefield. Yet these rewards come at a price. Pay, pensions and post-military employment are financially costly, more so if qualified potential soldiers have much better options elsewhere. Promoting people irrespective of political loyalty risks enfranchising individuals who may be tempted to seize the reins of power themselves.

It follows from this that the combination of skills and incentives which lead to military effectiveness are the product of certain broader political and economic variables. The narrower the funnels through which the army puts its recruits, the lower will be the benign competition in skills acquisition which military effectiveness requires.

Many factors can constrict the funnels.

Low literacy acts to constrict the enlisted to NCO funnel. Because enlisted men are more numerous, are subjected to greater danger and are given less decision making responsibility than
officers, they are paid less and hence are recruited from those segments of the population whose alternative options are usually low paid manual labor. In societies which fall short of universal literacy, these are precisely the segments of the population most likely to contain large proportions of illiterates. Faced with a large number of illiterate enlisted men from which the NCO corps must be drawn, armies must choose a number of sub-optimal solutions. They can attempt to maintain high standards of military education in the NCO corps by lowering the number of NCOs, in which case there will simply not be enough NCOs to make dispersion and decentralized decision making work. They can try to use junior officers as NCOs, which is expensive and runs the risk of entire platoons or companies being left leaderless if, as is more likely, the junior officers are killed trying to do an NCO’s job. Alternatively, they can have an NCO corps which has little or no formal military education, in which case it will be very hard for officers to devolve any real responsibility to them. All of these solutions lead ultimately to the same thing – centralized command at the small unit level, combined with tightly bunched formations to make this centralization work, making implementation of the modern system very difficult and leaving the Army highly vulnerable to the enemy’s firepower.

Vulnerability to coups works to constrict the funnel at the officer corps level. Officers are drawn from wealthier and better educated sections of society than enlisted men, so literacy is less of a concern here. By contrast, officers, especially senior officers, are situated far closer to the center of power, both geographically and more importantly in terms of the Army’s social network. Consequently it is officers whom the Executive must really fear and here that coup proofing wreaks its worst results. Coup vulnerable Executives can engage in a number of damaging interventions in an Army’s recruitment and promotion systems. On enlistment, they can insist on extensive political screening of potential officer recruits, cutting the Army off from
the services of anyone deemed potentially disloyal. Once in the officer corps, they can compel military officers to hold dual positions in the military and party hierarchy, forcing them to devote large amounts of their precious time and attention to acquiring knowledge of party ideology as a costly sacrifice to remain within the party ‘club’. They can also promote those loyal to the leadership ahead of more competent but also more suspect. All of these serve to constrict the funnel and lower destructivity.

In states with both universal literacy and a politically secure Executive, marginal advantages are to be had by the state with the most favorable labor market structures. States which offer potential officers poor alternative options to enlistment and good post service prospects will have an advantage over states which do not. They will be far more able to recruit and retain high quality personnel, whose competition for advancement drives destructivity.

These propositions will now be tested quantitatively and in case studies against the alternative theories I outlined in Section IV. In the case studies I will be looking to guard against the degrees of freedom problem by ‘multiplying observable implications within the same case’. Thus, for instance, simply testing the proposition that State A will be effective because it has not had a coup and has a large Army is not enough. Many theories might predict this. My challenge in the case studies is to show not only that State A is effective but for the reasons my theory outlines. Demonstrating that each stage in the causal chain tests out the way my theory predicts is a very effective way to mitigate the problems of over determination and randomness which may otherwise plague a study of only a few cases (Bennett and George). The hypotheses generated by my theory and those generated by the alternatives are outlined below:

2.3.8 Hypotheses
$H_1$: States without a tradition of coups will be less likely to opt for political restrictions on the officer funnel.

$H_2$: The higher a state’s literacy levels, the more literate individuals they will have who are happy to join the Army as enlisted men, potentially to earn promotion to NCO status.

$H_3$: In both the officer and the NCO funnels, the larger the pool of qualified candidates, the more will be the competition and the higher will be the standards of military education demanded.

$H_4$: The higher the standards of military education, the more subordinates will be able to devise their own solutions to problems which had not been pre-planned by their superiors. Knowing this, superiors will be happier to devolve power to their subordinates.

$H_5$: The moral hazard problems of devolving power to subordinates is best solved by ‘subordinate peer monitoring’ – that is, informal social pressure to fight hard and use one’s initiative properly amongst one’s comrades. Harsh punishments are useful only in clear cut cases of shirking (such as desertion or mutiny), or if superiors have little confidence in subordinates’ knowledge and skill levels to use their initiative properly.

$H_6$: Where superiors lack confidence in the knowledge or skill base of their subordinates, they will be compelled to centralize decision making. This in turn implies closely bunched up formations to allow superiors to observe their subordinates more closely. At the same time, however, this precludes effective adoption of the modern system and leaves the Army vulnerable to the enemy’s firepower. In short, this will severely hamper destructivity.

**2.3.9 Alternative Hypotheses**
$H_{A_1}$: States will tend to recruit the best individuals at all levels where the external threat environment requires it, even if in so doing, the Executive increases the chances that he will be removed in a coup, or is compelled to spend more on military pay and conditions rather than any other sectional interests which may support his rule.

$H_{A_2}$: States which fail to do the above will be selected out of the international system

$H_{A_3}$: A state’s level of destructivity may be related to literacy, but the causal mechanism will be different from that outlined above, running through superior logistics and supply chain management, better weaponry or superior state capacity which may allow for better tax collection or detection and punishment of deserters.

$H_{A_4}$: Coup proofing will damage military effectiveness through the creation of parallel military organizations. These organizations will damage effectiveness either by reducing the level of inter-branch training or by creating damaging inter-service rivalries.

$H_{A_5}$: Destructivity will in fact be undermined more by a ‘culture of hierarchy’. Societies which place a great deal of emphasis on hierarchical social relations will find it harder to put into place the decentralized small unit command system so essential to destructivity.

2.3.10 The Following Chapters

In the next chapter, I test my arguments statistically against the alternatives used above, using data from Biddle and Long, Pilster and Boehmelt and Clodfelter. I find strong support for the two key variables of my funnel argument, though of the two it is literacy which appears to have the strongest effect. At the same time, other variables which the previous literature had
believed to be important – such as ethnic heterogeneity and the degree of external threat – are shown to be unimportant, while some variables such as democracy and a ‘culture of hierarchy’ do matter, but in the opposite direction to that which the literature had previously assumed.

I will then proceed to use case studies to illustrate my causal mechanisms in greater detail. First, I compare Iraq and the United States to demonstrate how both literacy and coup proofing affected the NCO and officer corps, and hence the relative fighting effectiveness, of the two states. Iraq and the United States were not selected as a most or least likely dyad, or as a case control study. Rather, the capture of key Iraqi military and political documents following the Allied invasion in 2003 combined with the willingness of a number of sophisticated senior retired Iraqi officers prepared to talk to Western researchers offers a degree of access to the Iraqi Army’s internal working arguably unparalleled amongst coup vulnerable, low literacy states. The United States, for its part, was Iraq’s most effective foe and offers a wealth of data and previous operations research upon which to base my work. The USA-Iraq dyad thus offers a good case upon which to illustrate my causal mechanisms, without claiming that my key variables are the only things separating the sides.

In my final two case studies, I provide an answer to the question – what happens when two states which have no tradition of coups and universal literacy fight one another? For this, I look to a comparative study of Britain and Germany in the world wars. As Stephen Biddle noted, Germany generally outperformed the Western allies tactically in both world wars, even though on the basis of literacy and coup proofing alone, one would expect to see little difference between them.
I suggest that the funnel argument can also explain German combat effectiveness relative to the Western democracies such as Britain. Specifically, I argue that the British Army’s ‘funnel’ was constricted, not by illiteracy or coup proofing, but rather by good alternative options in the civilian economy for potential military recruits, combined with a persistent failure to solve the ‘second career’ problem. It is this which explains the – marginal – gap in skill between the British and German Armies in the World Wars.

Yet the British-German case also helps us to understand a novel finding of the statistical chapter – that, all other things being equal, democracies are less militarily effective than autocracies. Britain and Germany both went into World War One as mixed regimes. As the House of Commons enjoyed more power than the Reichstag, Britain is usually classified as more democratic than Germany. However, whereas the Reichstag was elected by universal male suffrage, the House of Commons was not. The Reichstag also had an unusually high level of influence over military justice. Consequently, the Imperial German military code afforded German soldiers a high level of rights and the number of executions in the German Army of World War One was low. Conversely, the British Army was relatively ruthless in its use of the death penalty for desertion, especially, radical politicians alleged, against soldiers from lower working class backgrounds disenfranchised by property qualifications. Ruthless as the British Army’s discipline was, there is evidence that it acted to stiffen British resistance to German attacks. The German Army’s leniency, by contrast, was thought by some German commanders such as Ludendorff to have been behind the collapse of German resistance in the final ‘Hundred Days’ offensive of 1918.
Between the two wars, both the British and the German political systems and military codes moved in opposite directions. Britain became more democratic, with the Representation of the People Act of 1918 extending the vote to women and property less males. In 1930, the Commons voted to abolish the death penalty for desertion. After a fifteen year experiment with democracy, Germany elected Adolf Hitler, who proceeded to transform his country into an autocracy far more severe than that of the Kaiser. Hitler also transformed German military justice, removing the rights of defendants and expanding the scope of the death penalty. By World War Two, the Germans executed unprecedented numbers of their own men for various offenses, while the British did not execute a single soldier. Many military historians credit the ferocious resistance the Germans offered both the Allies and the Soviets to fear of the firing squad. British Generals, however, complained of the difficulties they had in preventing their men from surrendering and in pressing home attacks against the enemy. Consequently, numerous British theater commanders pressed Churchill to reinstate the death penalty for desertion. Churchill, while sympathetic, refused to do so given the prospect of press and parliamentary opposition.
3. **Quantitative Analysis**

Here I test my argument through macrocomparative statistics against a variety of competing explanations drawn from previous literature. I find both literacy and the years coup free variable to have strong and significant effects on destructivity, defined as the log loss exchange ratio – the natural log of the ratio of attacker to defender casualties. Of the two variables, however, literacy has a more consistently strong effect – suggesting that a broad enlisted to NCO funnel is more important at the margins for destructivity. I also find that the literacy variable remains significant even when controlling for a number of other measures of development and/or state strength, including GDP per capita, average years of schooling, government spending as a proportion of GDP, defense spending per soldier and miles of railroad per square mile. This strongly suggests that my funnel mechanism, rather than some other mechanism such as logistics, technology or state capacity to recruit, organize and monitor armies, is the key driver of destructivity.

3.1 **Unit of Analysis – the Operation**

Biddle and Long’s refurbished data from the US Army’s Historical Evaluation and Research Organization (HERO) for their article “Democracies and Military Effectiveness: A Deeper Look” (Biddle and Long 2004) remains the standard loss exchange ratio data for political scientists. However, the coverage in this dataset of the later part of the twentieth century is very patchy – post 1970 only the Yom Kippur War and the Bekaa Valley operation are included. Also, their coverage of earlier conflicts such as World War Two is heavily weighted towards conflicts involving the United States relative to those of other states such as Russia/the Soviet Union. To
remedy the former problem, I combined Biddle and Long’s data on loss exchange ratios with that of Pilster and Boehmelt, whose work focuses solely on the post 1967 years (Pilster and Boehmelt 2011). To remedy the latter, I included all additional operations from the ten deadliest wars of the twentieth century from which I could find data in Clodfelter (Clodfelter 2007; Sarkess 2006). Details are to be found in the data appendix. For the sake of robustness, I ran my models using only the Biddle and Long observations and found the results to be unchanged (see below).

3.2 Independent Variables

3.2.1 The Funnel

3.2.1.1 Literacy- Enlisted to NCO Funnel

Literacy measures the percentage of individuals in a given country who can read and write. This is taken from the Banks data, with gaps filled in from other sources such as the Statesman’s Yearbook and the UNDP’s Human Development Indicators where necessary (Banks 2011; Statesman’s Yearbook 1913; UNDP 2012). While the Banks Data and the Statesman’s Yearbook are remarkably comprehensive on this variable, some gaps remain – for instance the Ottoman Empire and the participants in 1932’s Chaco War. I use an imputation procedure based on the natural log of mail per capita collected by the International Postal Union and recorded in the Banks Data, similar to that used by Angus Maddison’s team to estimate literacy rates in late nineteenth century Europe (Banks 2011; Maddison 2003). This correlates fairly highly with literacy where data on both variables exist (r-squared of .5457 on 4858 observations). Adding in the missing country’s literacy rate for the first year in which comprehensive literacy data is available – 1949 – improves the fit even further to an r-squared of .649 with the same number of
observations. For instance, the imputed literacy statistic for the Ottoman Empire in World War One is .097, which comes very close to the actual figure of .1 provided by the Turkish economic historian Sevket Pamuk (Pamuk 2008).

How good a proxy is the literacy variable for good lower level leadership and military education? Literacy could, of course, also be proxying for a number of other factors – such as state strength or logistical capability. Below I will propose some measures to control for these other factors explicitly, in order to isolate more precisely the causal mechanism I outlined in the theory chapter.

Explicit measures of lower level leadership and military education are not available for a significant chunk of the dataset. For instance, John Keegan’s World Armies almanac gives information on whether a given state had a military academy in 1979, but does not give the date of foundation (Keegan 1979). Given that only a small number of engagements in the dataset take place after this date, there are not sufficient degrees of freedom to test whether the existence of a military academy in itself has a significant effect on combat power. I nonetheless regressed this variable on national literacy rates reported in Banks in 1979 and found it to be positively and significantly associated with literacy (Banks 2011). This further supports the notion that literacy is a good proxy for military education, as can be seen below.
Table 1: Logistic Regression on military academies

Dependent Variable: Existence of an indigenous military academy in 1979 (0-No; 1-Yes)

<table>
<thead>
<tr>
<th>Component</th>
<th>Coefficient</th>
<th>SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-1.829453</td>
<td>.504781</td>
<td>***</td>
</tr>
<tr>
<td>Literacy</td>
<td>.0024228</td>
<td>.000783</td>
<td>***</td>
</tr>
<tr>
<td>Population</td>
<td>.0000764</td>
<td>.0000249</td>
<td>***</td>
</tr>
<tr>
<td>GDP Per Capita</td>
<td>-.000012</td>
<td>.0000548</td>
<td></td>
</tr>
</tbody>
</table>

Likelihood Ratio: 38.65***
Pseudo $r^2$: 0.2190
N: 130

*** Significant at the 1% level

At the same time, Williamson and Murray gathered estimates of the number of NCOs per company for various participating armies in World War One. Unfortunately, military historians have not produced similar estimates for other conflicts, but the Williamson and Murray data does provide suggestive evidence that the national literacy rate is a good predictor of the proportionate size of the NCO corps, as shown graphically below (Austria-Hungary and Italy are hard to distinguish visually as their literacy rates and NCOs per company are almost identical):
Thus although direct measures of military education and the strength of the NCO corps are patchy, where they do exist, they correlate strongly with literacy. Literacy is thus a very good proxy for the lower levels of the funnel argument, especially when, as will be outlined below, competing causal mechanisms are controlled for.

The literacy variable then is very simply “Literates as % of Attacker’s Population/(Literates as % of Attacker’s Population + Literates as % of Defender’s Population)”. I expect this variable to be negatively signed and significant (because the dependent variable is log(attacker casualties/defender casualties), so that a negative coefficient implies this variable to improve the attacker’s destructivity.
3.2.1.2 Years Coup Free- Officer Corps Funnel

*Coup* is the attacker’s share of the log of the number of years since the last coup in each country, coups being recorded in the Banks Data (Banks 2011). Where a country has never had a coup, this variable simply counts the number of years from the beginning of the Endurance of National Constitutions dataset in 1789 (Elkins 2009), or from its year of national independence to the year in which the war started. As World War One is the first war in the dataset this would mean that a country which has never had a coup would score at most log(125)=4.82. As with the other variables, *coup* will be measured as “Attacker Log Coup Free Years/(Attacker Log Coup Free Years + Defender Log Coup Free Years)”.

Biddle and Long’s operationalize coup risk in a different manner. They have two dichotomous variables marking whether the attacker or the defender is ‘favored’ in terms of prior coups. By ‘favored’ they mean that one side has had fewer coups in the past five years than the other (Biddle and Long 2004).

Biddle and Long are surely correct to note that prior coups are a significant risk factor for future coups and a good way to operationalize a state leader’s fear of violent deposition by his own military. Coups are a collective action problem amongst military officers, so that common knowledge and expectations of what other officers will do is key (Schelling 1980; Suk Yung-Chwe 2001). The longer a given state has been without a coup, the less a given officer will believe that other officers will join him if he mounts a coup. Given that all officers are reasoning likewise, this equilibrium is self-reinforcing. Conversely, if a state has recently had a coup, an officer must reckon that the probability of others joining in is high. This is the origin of the famous concept of the ‘coup trap’.
Quantitative analysis of the determinants of coup attempts and successes bears this out – Jonathan Powell’s work on coups suggests that the time since the last coup is, even holding constant other risk factors, a significant determinant of future coups in and of itself (Powell 2012).

Where Biddle and Long go wrong is in limiting the coup variable to a five year lag. Is a state which last had a coup six years ago at the same risk as one which never had a coup to begin with? Why is such a state so different than one which last had a coup four years ago? Iraq, for instance, had not had a successful coup since 1969 when Saddam Hussein’s tanks rolled into Kuwait, but this does not mean that the risk of a coup was not more pressing for him than for George HW Bush (Banks 2011).

Instead, I propose the relative coup variable to capture the impact of past coups on expectations of future coups. The logarithmic form is used as the marginal effect of one additional year without a coup on the probability of a future coup is expected to fade with time. That is, the fact that the United States went from 1789 to 1790 without a coup had far more impact on future civil military relations than the fact that it had no coup either between 1989 and 1990. After two hundred years, civilian rule is so entrenched that one more year of it can have little more effect on the already tiny probability of a future coup. In fact, Powell estimates that after 38 years without a coup, the risk of a subsequent coup for a given state drops to negligible levels (Powell 2012).

I expect this variable to be negative and significant.

3.3 Controls
3.3.1 Human Capital

*Education* is simply Biddle and Long’s measure of average years of schooling taken from the Banks data (Biddle and Long 2004). My contention is that once accounting for literacy, additional years of schooling should have little effect on destructivity. If literacy is significant even when controlling for average years of schooling, then this provides support for my contention that we need a more fine-grained conception of the relationship between education and destructivity.

3.3.2 Size of Government

*Government* can be measured in two ways. The first is through the size of Government as a proportion of the economy – that is, Government Revenue as a proportion of national income. Data on this variable is taken from BR Mitchell’s Historical Statistics Series, Angus Maddison’s *Monitoring the Global Economy* and the UNDP’s Development Indicators (post 1945) (Mitchell 2007 a; Mitchell 2007 b; Mitchell 2007 c; Maddison 1995; UNDP 2012). By Government I refer to both “Federal” (first level administrative) and “State” (second level administrative) levels, where such a distinction exists.

The second measure is through the proportion of the adult population who are employed by the Government. Data on this comes ultimately from national censes via the Statesman’s Yearbook.

Where these sources do not contain sufficient information, I have consulted other case-specific sources (for instance, the Economist Intelligence Unit’s Quarterly Economic Reviews and Country Reports) as outlined in the online data appendix to this article. As with the literacy
variable, government size will be measured as “Attacker Government Size/(Attacker Government Size + Defender Government Size)”.

This variable is designed to provide a measure of overall government capacity – the ability to raise revenue to pay for war materiel and the ability to monitor and control the population so as to prevent draft evasion and desertion. If ‘state strength’ is a good competing explanation for high destructivity, this variable should be negative and significant.

### 3.3.3 Democracy

Attacker democracy score is measured as its “DEMOC” score in the Polity Database. Following Biddle and Long, I operationalize the relative democracy score as “Attacker DEMOC/(Attacker DEMOC + Defender DEMOC)”. Where both states are fully autocratic (eg Germany and the USSR in World War Two, or China and Vietnam in 1979), this would result in division by zero and a missing value. I therefore filled this value in as .5, as both sides are equally (un)democratic. Only one combatant in the dataset fell under Polity’s conditions for ‘interregnum’ – Pakistan in 1971. This observation was dropped from the dataset. Expectations about the sign of this variable are mixed. According to ‘democratic triumphalists (Reiter 2001), the democracy variable should be negative and significant – the higher the attacker’s level of democracy relative to the defender’s, the lower should be his losses. However, an older, alternative view suggests the opposite. Having observed first-hand the fighting effectiveness of the German Army in World War Two, and the huge contribution made to defeating it by Stalin’s Red Army, many Allied military commanders came to the conclusion that democracy was an active hindrance to battlefield effectiveness. Chief of the British Imperial General Staff Field Marshall Lord Alanbrooke wrote in his diary in 1942:
“A democracy is at a great disadvantage against a dictatorship when it comes to war.”

(Alanbrooke 2001)

After the war, Dwight D Eisenhower seconded Alanbrooke’s judgment:

“We could lick the entire world if we adopted the methods of Adolf Hitler.” (Brands 1989)

In short, then, there are two competing hypotheses on the effects of democracy. According to the Reiter view, democracy should be negatively signed. According to the older view expressed by Alanbrooke and Eisenhower, the democracy variable should be positive and significant.

3.3.4 Ethno-Linguistic Fractionalization

A substantial literature in comparative politics and development economics suggests that collective action and public goods provision is far harder in an ethnically divided than in an ethnically homogenous society. This has been shown in both macro- and micro-comparative statistical work on economic growth and public goods provision (e.g. Easterly and Levine 2004), and even been tested and found true experimentally (Habyarimana, Humphreys, Posner and Weinstein 2007).

From this it follows that a collective action problem such as fighting a war should also be harder for ethnically diverse than for ethnically homogenous countries. Indeed, many political scientists have indeed made this claim with respect to one or two cases. Stephen Rosen claims that ethnic fragmentation hampered Indian fighting effectiveness (Rosen 1996), while Timothy Hoyt makes the same claim for Iraq (Hoyt 2007). Further, Dora L Costa’s micro-analysis of
desertion rates in the Union Army of the American Civil War also suggests that ethnically mixed small units fight more poorly than ethnically homogenous ones (Costa 2008). For the first time, I intend to test here the proposition that ethnic heterogeneity leads to lower destructivity.

To do so, I reconstruct a variable – *ethnic*- similar to that used by development economists such as Easterly. First, each state’s ethnicity score is defined as $1 - \sum_{i=1}^{n} s_i$ where $s_i$ is defined as the proportion of the population belonging to group $i$. This represents the probability that two randomly selected individuals will belong to a different ethnic group (Greenberg 1956).

For the post-World War Two wars, I intend to use Phillip Roeder’s data on ethnic fractionalization (Roeder 2001). While there are many competing versions of this variable – (Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg 2003; Easterly and Levine 2003; Fearon 2003) – Roeder’s data is the most temporally comprehensive, covering 1961 and 1985, where the other measures are simply one single year’s cross sectional data. I intend to use whichever of the two measures is closest to the start year of the war in question. The two Roeder measures – 1961 and 1985 – in fact correlate very highly at over .95, suggesting that a given country’s level of ethnic fractionalization changes very slowly anyway. Easterly and Levine assume as much in using the ethnic fractionalization score for one year only as an independent variable in their cross-sectional time series analysis of economic growth in Africa with the country-decade as the unit of analysis (Easterly and Levine 2003). The two post-World War Two wars for which I will not use this data for are the first Arab-Israeli and the first Indo-Pakistani wars of 1948 and 1947 respectively. Both wars saw large population transfers between states and so both the (post-war) Roeder data and the (pre-war) British colonial data are unreliable as a guide to the respective states’ level of ethnic fractionalization while the war was going on.
For the pre-World War Two era, I obtained data on linguistic and religious fractionalization from a variety of sources. The Statesman’s Yearbook reports fairly comprehensive data on ethnic group membership by country, often compiled from national census data. To supplement this, there is also the Ethno-Political Almanac of the Berliner-Steglitz Institute for International Affairs – a Weimar era German think tank which maintained data on national minorities in Europe. Where religious and linguistic fragmentation data are not provided by these one stop shop sources, I have consulted case-specific sources. For instance, the UK census did not provide information on ethno-linguistic affiliation. However, sociologist Michael Hechter has calculated the proportion of minority language speakers from a large sample of local parish birth, marriage and death certificates, which I have used to fill in information on British ethnic fragmentation (Hechter and Prall 1976).

As far as the definition of an ethnic group is concerned, I am following as closely as possible the coding rules of the *Atlas Narodov Mira*, on which Roeder’s own data is based. This source, available in English translation through Vladimir Telberg (Telberg 1965), defines membership of an ethnic group primarily through language. So far, I have tested my application of the Atlas’ method to data from the Statesman’s Yearbook for the small number of country-years for which there is an overlap and have found a high correlation at over .95.

Many analysts might be skeptical about data on ethnic fragmentation gathered from some governmental sources. Some governments may have incentives to play down the numbers of certain minority groups, while members of those groups themselves may wish to avoid identifying themselves as such if they have a credible fear of persecution.

The data gathering sources and procedures are outlined in the data appendix. In those cases which are most controversial, such as pre-World War One Turkey, I considered a variety of
sources representing conflicting points of view but nonetheless came to almost identical conclusions about the state’s overall ethnic fragmentation score (McCarthy 1983; Revorkian and Paboudjan 1992).

As with the other variables, \textit{ethnic} is defined as the attacker’s share of total ethnic fragmentation in the dyad.

\textbf{3.3.5 PoW Treaty Signatory Status}

A reputation for good treatment of prisoners of war should be helpful to an Army (Reiter 2001). Inducing enemy soldiers to surrender rather than killing them is a very effective way to defeat one’s opponents (Ferguson 2004b). In order to create this variable, I matched the list of countries which participated in inter-state wars in the twentieth century according to CoW with the signatories of the Geneva Convention of 1949 and its predecessor agreements regarding the treatment of Prisoners of War – the Hague Convention of 1907 and the Geneva Convention of 1929. This data is available from the website of the International Committee of the Red Cross. The variable I created from this – \textit{powtreaty} – is a trichotomous one valued at 0 if the defender is a signatory or party to the current PoW treaty and the attacker is not, 1 if both or neither side are, and 2 if the attacker is a signatory or a party and the defender is not. This variable should be negatively signed (that is, it represents an advantage to the attacker).

\textbf{3.3.6 Conscription}

The Statesman’s Yearbook contains information on whether military service was universal and compulsory in a given country in a given year – the year in question being defined as the year in which the war began. Where the Statesman’s Yearbook is not clear on whether there
was conscription in a given country-year, I checked in the International Institute for Strategic Studies Publication, *The Military Balance*. From this I created the variable *conscript*. Like *powtreaty*, *conscript* is trichotomous and is valued at 0 if the attacker had conscription at the start of the war and the defender didn’t, 1 if both or neither had conscription and 2 if the defender had conscription and the attacker did not. Expectations regarding the sign of this variable are mixed. Quite reasonably, many observers suggest that conscription should be a military disadvantage – conscripts are less well trained and motivated than professional soldiers (Biddle 2006; Kier 1997). This is the consensus view amongst modern political scientists. Conversely, many past policymakers believed that conscription was a military advantage – it gave a state access to a large pool of trained manpower which it could call upon quickly in time of war. This thinking lay behind the prohibition of conscription in Germany and the limitations on the terms of service of German soldiers under the Treaty of Versailles in 1919. There is therefore no clear expectation about the direction of the coefficient on this variable.

### 3.3.7 External Threat

The aim of this variable is to operationalize the contention that the military efficiency of a state’s army is a function of its external threat environment. Many analysts have pointed to the external threat represented by powerful neighboring states as a key determinant of the fighting effectiveness of the very different states of Germany and Israel (e.g. Shamir 2011). In this view, this external factor heavily outweighs any internal domestic determinants of destructivity – states which are weak relative to their neighbors will *need* to develop very skillful pound-for-pound Armies. Their adversaries, by contrast, do not.
There are many possible ways to operationalize this. The first is a simple spatial lag of contiguous states’ capacities - $threat_i = \sum_{j=1}^{n} cap_j$ where state $j$ is contiguous to state $i$.

However, this would likely be collinear with other important variables – literacy and democracy for instance. Moreover, it lacks face validity. A state which borders on a number of very powerful states but is itself much more powerful than any of them would seem to have much less need for an efficient Army than a state surrounded by a number of small rivals but which is itself even smaller. For instance, this coding would surely place Israel at the low end of the vulnerability scale – its neighbors are all relatively weak. By contrast, China would be considered highly at risk, given that it borders many very large, powerful countries such as Russia, India and Japan.

Paul Collier uses a similar logic to argue that the positive effect of a spatial lag of military expenditure as a percentage of GDP on military spending in developing states reflects a logic of ‘benchmarking’ or emulation rather than external threat (Collier 2007). External threat is better measured by the level of power relative to each other.

Consequently, I first operationalize the threat variable as a measure of the total capacities of contiguous states relative to one’s own. Formally, $threat_{1i} = (\sum_{j=1}^{n} cap_j / (cap_i + \sum_{j=1}^{n} cap_j))$, where each state $j$ is defined by CoW as contiguous to state $i$.

A more sophisticated operationalization of the threat variable may take into account the capabilities of ‘second order’ contiguous states. States often look to ‘neighbors of neighbors’ to balance against immediately contiguous threats. For instance, pre-World War One France looked to Russia to balance against Germany (Stone 1975), pre-World War Two France looked to Poland for the same service and 1920s Germany looked to the Soviet Union for cooperation against Poland (Taylor 1983). Having a potential ally in the rear of a contiguous rival may reduce one’s
incentives to develop an effective Army and increase the temptation to buckpass and freeride on the other’s contribution. Formally, 

\[ threat_{2i} = \sum_{j=1}^{n} cap_j / (\sum_{i=1}^{n} cap_i + \sum_{j=1}^{n} cap_j + \sum_{k=1}^{n} cap_k) \]

where state k is contiguous to state j but not to state i.

As with the other variables, threat is operationalized as a relative measure –

\[ threat = (\text{attacker threat} / (\text{attacker threat} + \text{defender threat}). \]

### 3.3.8 Spending Per Soldier

This control variable is included principally in order to ensure that the effects of military skill are isolated and that favorable loss exchange ratios are not erroneously attributed which in fact result from superior military technology. Spending per troop is easily obtained from Correlates of War and is the ratio of military expenditure to military personnel (Sarkees 2006). As with the other variables, this measure is in relative attacker/defender terms.

### 3.3.9 Troops

Again, this control variable is included in order to separate out favorable loss exchange ratios which result purely from local numerical superiority. The troops variable is simply the number of troops each side had engaged in the battle. Again, this is a relative attacker troops/(attacker troops + defender troops) measure. The data for this variable is taken from Biddle and Long and from Clodfelter, where the number of troops engaged could be identified (Biddle and Long 2004; Clodfelter 2008).
Table 2: First Set of Regression Results

OLS with robust standard errors

Dependent Variable: Log (Attacker Casualties/Defender Casualties)

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4 (B&amp;L data)</th>
<th>Model 5</th>
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<td>2.502709***</td>
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<tr>
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<td></td>
<td></td>
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<td>-.4839602</td>
<td>-.8894109*</td>
<td>-1.188088**</td>
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<td>(.5441152)</td>
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<td>24.22***</td>
<td>36.96***</td>
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</tr>
<tr>
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<td>.3215</td>
<td>.312</td>
<td>.4162</td>
<td>.4187</td>
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<td>343</td>
<td>343</td>
<td>343</td>
<td>303</td>
<td>302</td>
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</table>

*** Significant at the 1% level
**  Significant at the 5% level
*   Significant at the 10% level
3.4 Discussion

As predicted, literacy has a very strong and significant effect on destructivity in the predicted direction. This result holds across all model specifications. My distinction between literacy in particular and human capital in general is justified by the fact that literacy remains significant even when including Biddle and Long’s average years of schooling as a control variable.

The substantive effects of literacy in the models above are hefty – using the coefficients estimated in Model 5, I ran 10,000 predictive simulations of a loss exchange ratio with literacy at its mean and then literacy increased one standard deviation in favor of the attacker. The average effect was to more than halve the attacker’s casualties relative to the defender. The results of the simulation are displayed graphically below.
Figure 20: Effects of a one standard deviation change in the attacker’s advantage on literacy, all other variables at their means

The PoW Treaty Variable is also highly significant in the expected direction. This appears at least to provide support for the hypothesis that better treatment of enemy prisoners of war provides a major boost to one’s own fighting effectiveness. However, this finding is vulnerable to a challenge of potential endogeneity or omitted variable bias – is there some variable which explains why states sign PoW treaties which could also impact destructivity, and is it this variable, rather than the PoW treaty itself, which accounts for the effect found above? I examine this question below.

The democracy variable is strongly and robustly significant in the direction expected by the older view expressed by Alanbrooke and Eisenhower – controlling for other factors,
democracies are significantly less effective on the battlefield than autocracies. The years coup free variable is also significant in the expected direction, although this result is less robust. Ethnicity is significant in some models but in the opposite direction expected by political scientists such as Hoyt and Rosen – more ethnically diverse states fight more effectively, at least in some models. The question now arises – to what extent are these findings driven by omitted variable bias. Specifically, is the literacy variable simply capturing the effect of ‘development’ in general or better logistics in particular? To answer this question, I re-ran my analysis using two additional variables as outlined below.

3.5 Robustness Checks – Is this an artifact of development or better logistics? Additional Controls for development and logistics

3.5.1 Development

According to Beckley, wealth is a major determinant of destructivity. In fact, given that wealth and literacy are widely acknowledged to correlate highly, it is important to ensure that any effect of literacy is not simply due to omitting wealth. For the Biddle and Long observations, I use Beckley’s own data on wealth. For the remaining observations from Pilster and Boehmelt and Clodfelter, I return to Beckley’s original source – Angus Maddison’s The World Economy: Historical Statistics- for GDP per capita data in 1990 Geary Khamis International Dollars (Maddison 2007). As with the other variables, wealth is operationalized as the attacker’s share of total wealth. I expect this wealth to be negatively signed and significant, but to be less substantively important than literacy.

3.5.2 Logistics
As Beckley and other observers attribute the superior destructivity of highly developed states to good logistics, it is also important to rule this out as a competing explanation. As a measure of a state’s logistical capacity, I use the Banks Data’s variable on miles of railroad per square mile (Banks 2011). For the two World Wars, rail was the principal mode of transport for men and materiel. Even today, with the rise of road and air freight, the railways account for over 40% of the freight delivered in the United States alone (National Atlas of the United States 2004). Again, rail is operationalized as the attacker’s share of total railroad per square mile. If good logistics is a key determinant of destructivity, then we would expect rail to be negative and significant.
Table 3: Robustness check, including development

<table>
<thead>
<tr>
<th></th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
<th>Model 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.74*** (.79)</td>
<td>4.09*** (.66)</td>
<td>4.18*** (.632)</td>
<td>4.8*** (1.87)</td>
</tr>
<tr>
<td>Education</td>
<td>-.527 (.94)</td>
<td>-.635</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy</td>
<td>-5.1*** (1.98)</td>
<td>-4.76*** (1.420455)</td>
<td>-3.95*** (1.53)</td>
<td>-4.86*** (1.867)</td>
</tr>
<tr>
<td>Ethnic</td>
<td>-.74 (.434)</td>
<td>-.476 (.401)</td>
<td>-.458</td>
<td>-.721</td>
</tr>
<tr>
<td>Wealth</td>
<td>-3.21*** (1.57)</td>
<td>-3.77*** (1.313)</td>
<td>-4.28*** (1.399)</td>
<td>-3.37*** (1.484)</td>
</tr>
<tr>
<td>Spending</td>
<td>.102 (.46)</td>
<td>.0588 (.435)</td>
<td>.225</td>
<td>.1193</td>
</tr>
<tr>
<td>Troops</td>
<td>.04 (.533)</td>
<td>.223 (.525)</td>
<td>.199</td>
<td>.039</td>
</tr>
<tr>
<td>Conscript</td>
<td>.18 (.128)</td>
<td>.227 (.1344)</td>
<td>.229</td>
<td>.184</td>
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<tr>
<td>Threat 1</td>
<td>.11 (.541)</td>
<td>.103</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threat 2</td>
<td></td>
<td>-.357 (.489)</td>
<td>.009</td>
<td></td>
</tr>
<tr>
<td>PoW Treaty</td>
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</tr>
<tr>
<td>Coup</td>
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<td>-3.033*** (.756)</td>
<td>-3.12*** (.7264)</td>
<td>-2.84*** (.685)</td>
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<td>Democracy</td>
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<td>2.702*** (.422)</td>
<td>2.54*** (4.3)</td>
<td>2.7*** (4.38)</td>
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<tr>
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<td>26.72***</td>
<td>26.62***</td>
<td>31.58***</td>
</tr>
<tr>
<td>$R^2$</td>
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<td>.39</td>
<td>.3886</td>
<td>.4454</td>
</tr>
<tr>
<td>N</td>
<td>315</td>
<td>352</td>
<td>352</td>
<td>315</td>
</tr>
</tbody>
</table>
As can be seen above, the literacy variable remains statistically and substantively significant even when taking into account development as proxied by GDP per capita and logistics as proxied by railroads. The coup free variable becomes far more strongly and robustly
significant when controlling for GDP per capita but is weakened by the inclusion of the railroads variable.

The GDP per capita variable does have an independent effect on destructivity even controlling for literacy, but this effect is weaker and goes away when one also controls for railroads (railroads, years coup free and wealth being relatively highly correlated).

Democracy continues to have a strong and significant negative effect on destructivity, while conscription also has a negative effect, though only in one model.

3.6 Further robustness checks – ‘hierarchy’ and logistics

Many analysts may doubt that a variable measuring the railway infrastructure of a given state at home is necessarily a good measure of its logistical capacity in what may be a distant theater of operations. I consequently re-ran my models using a second measure of logistical capacity. Ideally, I would use a direct measure such as the ‘tooth to tail’ ratio – that is, the ratio of fighting soldiers (infantry, armor and artillery) to service members in support functions such as engineers, signalers, medics and administrative staff. Unfortunately, as with the NCOs per company variable, this data exists only for a small number of country-years. Those data which do exist cast doubt on the proposition that it correlates very highly with literacy. For sure, on the eve of World War One, high literacy Britain and the United States had a low tooth to tail ratio and low literacy Russia had a high ratio. However, high literacy Germany also apparently had a high tooth to tail ratio (Statesman’s Yearbook 1913).

Consequently, I had to rely on the original HERO logistical advantage variable (Biddle and Long 2004). This variable was hand coded by the compilers of the HERO dataset themselves
and represents their judgment of the extent to which the attacker’s logistics were superior to those of the defender. Of course, this variable is deeply problematic. Having observed that an attacker performed well, coders may, consciously or subconsciously, be tempted to rate its logistical advantage as having been high too, in the same way that sports journalists, for instance, attempt to impose a narrative on an in reality random sequence of results. Nonetheless, my concern here is not to estimate the effects of logistical capacity per se, but to ensure that my literacy variable is capturing the causal mechanism which I suggest and not spuriously picking up the effects of superior logistics. Therefore, a variable which in all likelihood overestimates the impact of logistics is biased against my own argument. This variable also has the effect of reducing the sample size as it is only available for the observations taken from the Biddle and Long data.

At the same time, it is possible that states with a culture of hierarchy may have both lower levels of literacy and lower fighting effectiveness.

As I have argued, destructivity relies upon the successful devolution of power to lower level ranks – for instance, NCOs drawn from the peasantry or working class. It may be that the reluctance of certain armies to devolve power stems not from a lack of military education at the lower level caused by low literacy, but rather from a cultural aversion to placing decision making power in the hands of the lower classes (Biddle 2006). At the same time, the fighting effectiveness of military organizations as wide ranging as the Israeli Defense Force (Senor and Singer 2009), the British SAS, the German Waffen-SS (Ripley 2004) and the Australia and New Zealand Army Corps of World War One (Ross 1985), has been attributed to their informal, non-hierarchical organizational culture.
Many political scientists are reluctant to resort to cultural explanations, given the difficulty involved in measuring culture objectively. Conversely many military historians and military officers insist culture is crucial.

To resolve this impasse, I looked to the work of the Dutch organizational sociologist Geert Hofstede. Hofstede measures social attitudes on a variety of dimensions. Most pertinently to destructivity, he measures attitudes to authority through the power distance index. The power distance index is measured on a scale of 0-100, with 100 being the highest value. This scale captures the extent to which ‘the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally’ (Hofstede 2010, 61). As expected, this variable correlates strongly and negatively with development, with inhabitants of wealthier countries more likely to question authority. However, there is also significant variation among states even at the same level of development – French speaking Belgium, for instance, scores far more highly on the power distance index than does Flemish Belgium. Although this is based on post-World War Two survey data, Hofstede himself believes that these cultural traits are exceptionally robust and long lasting. For instance, he traces the high power distance index scores of Southern Europe and China to the Roman Empire and Confucius respectively, if not further back in time (Hofstede 2010). Hofstede himself suggests that high pdi cultures will be better at organizational tasks that involve discipline while low pdi cultures will be good at tasks which involve low level initiative (Hofstede 2010, 75). As modern warfare demands both, it is unclear what the sign of the coefficient will be.
As with the other variables, then, hierarchy is measured in terms of the attacker’s score relative to that of the defender. The higher the value of the hierarchy variable, the more acceptant of hierarchy is the attacker’s culture relative to the defender.
Table 5: Robustness check including hierarchy and logistics
OLS with Robust Standard Errors

<table>
<thead>
<tr>
<th></th>
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<th>Model 3</th>
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<td>9.035337***</td>
<td>9.201162***</td>
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</table>

* Significant at the 10% level
** Significant at the 5% level
*** Significant at the 1% level
The results of the regressions provide further support for the notion that literacy rather than human capital or wealth more broadly construed is the key difference between developed and underdeveloped states. Biddle and Long’s human capital variable is no longer significant when controlling for literacy. Literacy itself is significant in the predicted direction in all four models at the 1% level. Given that these models also include controls for other potential causal mechanisms linking literacy to destructivity, such as weapons quality, logistics, state capacity and overall wealth, the above results also provide support for my proposed causal mechanism of military education for the junior officer and NCO corps. The substantive effects of literacy are quite crushing. To illustrate this, I performed a post-estimation simulation of the effects of a one standard deviation change in literacy in the attacker’s favor on his casualties relative to the defender while holding all other variables at their means, using the coefficients and standard errors estimated in the model with the best fit, Model 3. Details of the technique used can be found in the log file and technical appendix, but the aim is to give the reader not only a point estimate of the substantive effects of a change in an independent variable but also the associated uncertainty. As can be seen below, a one standard deviation change in literacy in the attacker’s favor on average reduces his relative casualties to almost one third of their level when all variables are held at their means.
The variable with the second strongest negative effect on attacker casualties relative to the defender is $pdi$, measuring the degree of cultural hierarchy. In light of Biddle’s view about the inability of hierarchical cultures to adopt the modern system, this finding is intriguing and so bears repeating – the more hierarchical the attacker’s culture, the lower his casualties are relative to the defender, all other things being equal. It appears that, as Hofstede speculated, the ability of hierarchical cultures to instill discipline outweighs any problems they have with devolving power to subordinates.

Now of course the objection may be raised – is the $pdi$ variable truly exogenous? One could imagine that good performance in war might increase one’s trust in authority figures of all kinds. Consequently, the power distance index might be a consequence of destructivity rather
than a cause. To test the robustness of my findings to this challenge, I used difference in language group\(^1\) (as defined by Ethnologue) as an instrument for the power distance index variable (Ethnologue 2009). Language group is plausibly exogenous – since the Dark Ages, it has been very rare for nations to change their language group after a defeat in war. Language group is also, as Hofstede suggests, very strongly correlated with the power distance index (Hofstede 2010). A two stage least squares regression with language group as an exogenous instrument for the power distance index showed no substantive difference to the models presented above, as the results displayed below demonstrate.

\(^1\) e.g. attacker’s language group is West Germanic and the defender’s language group is Romance.
Table 6: Two Stage Least Squares Regression with Robust Standard Errors

Instruments: Attacker West Germanic speaking and Defender West Germanic speaking (0-1); Attacker West Germanic speaking and Defender Romance speaking (0-1); Attacker West Germanic speaking and Defender Slavic speaking (0-1); Attacker West Germanic speaking and Defender Japonic speaking (0-1); Attacker Slavic speaking and Defender West Germanic speaking (0-1); Attacker Slavic speaking and Defender Japonic speaking (0-1); Attacker Romance speaking and Defender West Germanic speaking (0-1); Attacker West Semitic speaking and Defender Central Semitic speaking (0-1); Attacker Central Semitic speaking and Defender West Semitic speaking (0-1); Attacker Japonic speaking and Defender West Germanic speaking (0-1)

|                          | Estimate | Std. Error | t-value | Pr(>|t|) |
|--------------------------|----------|------------|---------|----------|
| Intercept                | 11.40285 | (2.233062) |         | ***      |
| Power Distance Index (instrumented) | -5.81761 | (1.717356) |         | ***      |
| Literacy                 | -8.50303 | (2.113605) |         | ****     |
| Ethnic                   | .4285276 | (.592388)  |         |          |
| Government               | -3.07282 | (1.471525) |         | **       |
| Spending                 | -.471933 | (.9119619) |         |          |
| Troops                   | .2195096 | (.5316523) |         |          |
| Wealth                   | -5.42081 | (1.823826) |         | ***      |
| External Threat          | 1.054564 | (.606836)  |         |          |
| Conscript                | .2544398 | (.2625749) |         |          |
| PoW Treaty               | -.7273299| (.40468)   |         |          |
| Coup                     | -2.937217| (1.009254) |         | ***      |
| Democracy                | 2.730555 | (.527122)  |         | ****     |
| Logistics                | -.3934401| (.1332551) |         |          |
| $r^2$                    | 0.4149   |            |         |          |
| N                        | 296      |            |         |          |
The power distance index does indeed have a strong, positive and exogenous influence on destructivity.

In fact, I suggest that the problem which armies like that of Iraq have undoubtedly had with devolving power to subordinates are more likely related to literacy than to culture. It is worth noting that in a simple bivariate regression on the loss exchange ratio, the power distance index is positively associated with greater attacker casualties. In fact, higher power distance index states fight more effectively than lower power distance index states which are at the same level in terms of literacy, development and other variables, but this is masked for outside observers by the fact that high power distance index countries tend also to have lower literacy and wealth. The effects of a one standard deviation change in the attacker’s favor in the amount of hierarchy in his culture are displayed graphically below. The average effect is to more than halve his casualties relative to the defender.
The effects of development, by contrast, are rather modest compared with literacy. GDP per capita has a significant effect on destructivity only at the 5% level, and either not at all or at only the 10% level when human capital is included as a control. Substantively, the effects are weak. A one standard deviation change in the attacker’s advantage in GDP per capita reduces his casualties by just less than 50%, whereas the same change in the literacy variable effects a reduction of almost 70%. The effects of GDP per capita are displayed below.

Figure 22: Effects of cultural hierarchy with all other variables at their means

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Another apparently surprising finding is that democracy works in the opposite direction to that posited by Reiter and Stam. Indeed, not only is democracy positively harmful for destructivity, but this is a very robust and substantively meaningful finding. As can be seen below, a post estimation simulation of the effects of a one standard deviation increase in the attacker’s democracy score more than doubles his casualties relative to the defender.
Effects of Democracy

Figure 24: Effects of democracy with all other variables held at their means

Again, this does not mean that the effect of democracy vanishes when one controls for literacy, wealth and other factors. All other things being equal, democratic armies are systematically poorer fighters than autocratic ones. In light of the probable ability of autocratic armies to impose harsher punishments on their troops (more of which below) and the ‘stiffening’ effect which this sadly but most likely has, this is all too plausible. Indeed, there is significant historical evidence that this is indeed the case, as will be outlined in the forthcoming chapters.

Finally, coup risk has also been shown to be a significant factor in destructivity. The coup years variable was significant at the 5% level in 3 of the 4 models and at 1% in one. A one standard deviation increase in the attacker’s advantage in years coup free lowered his relative casualties by approximately 25%. Whilst substantial, this is a smaller reduction than that achieved
by a similar increase in the attacker’s advantage in literacy. Given the unit of analysis, this is unsurprising. Loss exchange ratios primarily measure tactical rather than strategic proficiency. Of course, bad strategic decisions can also damage tactical effectiveness, but for the most part loss exchange ratios are a measure of lower level leadership. Coup proofing, by contrast, is likely to be most severe at the highest levels of the Army closest to the political leadership. Nonetheless, coup proofing unquestionably damages destructivity, as can be seen from the simulations below.

Figure 25: Effects of the number of years coup free with all other variables at their means

The ‘dogs which did not bark’ are also revealing. In no model is ethnic fractionalization significant in the expected direction. On the face of it, this is surprising. Yet the experience of the United States military has shown that, rather than ethnic diversity undermining combat power, experiencing combat together actually helps to overcome ethnic divisions. Many RAND micro...
studies conducted to assess the potential impact of gays in the military reached the conclusion that soldiers can form rough bonds of trust between each other in fighting even if they would not normally socialize in civilian life (MacCoun and Hix 2005). Yet these rough bonds of trust can also evolve into closer and less pragmatic relationships – towns with significant Army bases are some of the most racially integrated places in the United States (Moskos and Sidley Butler 1996). Nor is this simply an American phenomenon. Thinkers have often posited that military service can bring individuals of differing ethnic backgrounds together and forge a common national identity (Weber 1976).

Also surprising is the insignificance of the external threat variable. This insignificance is not, incidentally, an artifact of the particular operationalizations chosen. As a robustness check I re-ran the regressions on no less than 36 different measures of external threat, derived from various permutations of the definition of contiguity and how contiguous states might be treated if they are formal allies. None of these permutations produced a different result to those above. Quite why strategic vulnerability does not generally lead states to create more effective military forces is an interesting question for future research but beyond the scope of this paper.

3.7 Conclusion

The main findings of this chapter can be simply put – literacy, development, political stability and a culture of hierarchy all have strong independent effects on a state’s destructivity. Conversely, democracy is detrimental to destructivity, when these other factors are taken into consideration. The causal pathway linking literacy to destructivity is through the ability of literate states to recruit large numbers of NCOs and Junior Officers with a basic military education which allows them to think for themselves on the battlefield and makes the modern system possible.
Other plausible pathways—logistics, state capacity and weapons quality—have been controlled for and do not change the effect of literacy. Yet is literacy too undemanding a standard of education for a state to achieve? Consider, for instance, the apparently increasing divergence between developed and developing countries in terms of conventional combat effectiveness outlined in Biddle’s Military Power. Does this not contradict a literacy based account of destructivity, given that worldwide literacy rates have been converging?

The answer to this question is no. Biddle’s data shows, not that the developing and developed worlds have been diverging in military power, but rather that divergence has increased between states which have adopted the modern system and those which have not (Biddle 2004). My argument is that development and modern system adoption are not the same thing—in fact, relatively poor states with high levels of literacy could adopt large parts of the modern system and thus keep their losses down against developed enemies. Biddle’s own work on the Yugoslav Army in Kosovo (Biddle 2004), Hezbollah in Lebanon (Biddle and Friedman 2008) and al Qaeda’s 66 Brigade suggests precisely this (Biddle 2004).

The findings of this paper on democracy and hierarchy go against the grain of much contemporary thought on destructivity. These suggest that a willingness to submit to discipline and obey orders along with the ability of commanders to use harsh punishments to motive their troops are, loathe as we may be to recognize it, militarily efficient. Given that a soldier is actually asked, contrary to any natural tendency towards self-preservation, to risk his life in combat, this should not in fact be surprising. The contrary view that men will fight harder if they feel they have a stake in their society may be wishful thinking in light of human nature. To reverse Hume (1739)’s famous dictum, one cannot derive an ‘is’ from an ‘ought’.

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4. The Iraqi Army Revisited

“Finishing high school Iraqis can join the medicine college, the college of law and political science and the military college (academy). Now we can ask, why would a high school graduate who can join the military academy to be an officer, why would he want to be an NCO?”

“We could not trust them (the NCOs) - not all of them, but most of them….We had a saying “If you want something not to be achieved, give it to an NCO”. The status of NCOs was not as high as it should have been, and this was a bad thing for the Iraqi Army….Because we relied so heavily on our officers, our losses were much higher than any other Army in the world.”


The Iraqi Army under Saddam Hussein was nothing if not active, offering analysts plentiful evidence of the fighting style of an autocratic, developing world military. Fearing Iranian opposition to his regime, but expecting a relatively easy military victory, Saddam launched the first conflict of his rule in 1980 by invading Iran. Few analysts at the time or now would have described his Iranian opponents as a highly destructive enemy. Iran had only recently emerged from an Islamic revolution which involved serious purges of the officer corps and remained a relatively underdeveloped country. The Iranians therefore employed many crude and unsophisticated tactics against the Iraqis including wasteful human wave infantry attacks. Nonetheless, the Iraqis suffered numerous military reversals at the hands of the Iranians and were pushed back into their own territory. Only after many years of fighting did the Iraqi Army stage a recovery of sorts, expelling the Iranians from Iraq and forcing the Islamic Republic to the negotiating table (Pollack 2002).

Shortly after the end of the war with Iran, Saddam sent his forces to seize the oil-rich kingdom of Kuwait. An international coalition headed by the United States formed and threatened
a full scale ground invasion to expel the Iraqis from Kuwait. Overlooking the Iraqi Army’s initial shortcomings in the war against Iran, many analysts expected the Iraqis to be able to inflict serious casualties on the United States and its allies in the event of a ground assault. Partly in consequence of this, the Iraqi collapse in Operation Desert Storm made a seminal impression on military and political analysts. Michael Clodfelter described the war as ‘one of the most lopsided victories in military history’ (Clodfelter 2002). Quantitative data bears out this analysis. The US attack on Saddam’s forces yielded a loss exchange ratio of 0.00365 – that is, the Iraqi defenders lost 234 men for every American attacker (Clodfelter 2002). Even one sided Victorian colonial slaughters produced more even casualty numbers – the British/Sudanese loss exchange ratio at the Battle of Omdurman by contrast was “only” 0.0159 or 62 Sudanese for every British soldier lost (Clodfelter 2002). Nor can the extent of the Iraqi defeat be blamed, as that of the Mahdi’s men could, on an overwhelming deficiency in technology. Iraq’s technological handicap relative to the Coalition was very large by the standards of twentieth century wars – as Stephen Biddle notes, the mean date of introduction for the US weapons in Desert Storm was 1973.9 while Iraq’s was 1961.9, the largest gap of the sixteen wars for which data is available (Biddle 2004). Nonetheless, the Iraqis were fighting with modern Soviet tanks, aircraft and artillery rather than bows and arrows and spears. Moreover, as Biddle’s careful process-tracing demonstrates, technology alone cannot account for the huge disparity in loss exchange ratios. For instance, the much vaunted high technology air campaign preceding Desert Storm still left the Iraqis with more tanks than the entire Israeli Army had in 1967 (Biddle 2004). At the same time, the ratio of losses between the Iraqis and the Coalition was the same when the Iraqis faced Coalition forces such as

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the US Marine Corps or the British Army which had older or lighter equipment as when they faced the more heavily armed and high tech US Army (Biddle 2004).

The twelve years between Desert Storm and the US-led invasion of 2003 gave Saddam Hussein many years to reflect on the causes of the Iraqi Army’s deficiencies. The continued sanctions, bombing and frequent noises from the US political system about regime change – including the Iraq Liberation Act – should also have given him ample warning that further ground combat with US forces was a distinct possibility and could lead to the end of his regime. Nonetheless, Saddam failed utterly to revive the destructivity of the Iraqi Army. The conventional phase of Operation Iraqi Freedom was consequently every bit as crushing a victory for the United States as Desert Storm. The United States and Britain overran the Iraqi Army in a matter of weeks, losing 172 men\(^2\) to an estimated 13,450,000 Iraqi troops\(^3\).

Due to these lopsided reversals, the Iraqi case has attracted a host of analysts. Political scientists have pointed to Arab culture, poor motivation deriving from an autocratic system in which ordinary people have no say (Pollack 2002), and especially to the various policies instigated by Saddam to protect himself against a coup to explain the Iraqi Army’s persistent lack of destructivity.

Clearly, the limitations of a single case make it hard to distinguish amongst all the theories which have been put forward to explain Iraq’s low levels of military effectiveness. The Iraqi Army has almost always been militarily ineffective by most standards. Iraq has always been an Arab country, has never been highly developed and, in its history as an independent country, has been the scene of numerous successful and even more unsuccessful coups. Nonetheless, there

\(^2\) http://icasualties.org/Iraq/index.aspx

\(^3\) http://www.guardian.co.uk/world/2003/may/28/usa.iraq
are methods which can help the analyst to tease out the competing effects of different variables even within one country.

The first of these methods is by looking at secondary implications of the theories induced to account for Iraq’s low level of destructivity. In looking at these implications, the analyst asks what else besides Iraqi military ineffectiveness would be true if this theory were a good one.

The second of these methods is to look at those variables whose values change in Iraq over time. That is, if certain policies were pursued only at certain times and not at others, but Iraqi destructivity remained low, then it is hard to claim these policies were Iraq’s main problem. As we shall see below, this is precisely the case with some of the coup-proofing policies adopted by Saddam Hussein – they were sometimes changed, suspended or dropped altogether without significantly raising Iraqi fighting effectiveness.

In this chapter, I will outline the performance of my theory at length and demonstrate why it has strong explanatory power. I will then compare it to other accounts of the Iraqi Army’s fighting deficiencies and explain where these alternative theories go wrong.

I contend that the Iraqi Army’s problems stemmed from problems at both main entry points into the funnel – the NCO corps track and the officer corps track. Iraq’s low levels of basic literacy made it exceptionally hard to recruit NCOs who could receive a formal military education that a Western Army would provide. Poorer Iraqis who could read and write well had far better outside options in the oil and military munitions industries. Given this, the Iraqi Army’s NCO education system was threadbare, with only a minority of NCOs receiving any formal instruction at all. Consequently, Iraqi commanders had little confidence that they could devolve power to their NCOs, as their knowledge base would be insufficient to devise their own solutions to novel
problems. This lay behind the Iraqi Army’s inability to adopt most of the key elements of the modern system – whether elastic defense, independent small unit patrols or making proper use of concealment and cover in offensive operations – which many outside analysts claimed was at the root of its poor military performance.

Further up in the funnel, in the officer corps, it was coup proofing rather than illiteracy which did the damage. Literacy was an essential prerequisite for entrance to the Iraqi Army’s officer corps, but unfortunately, so was loyalty to Saddam Hussein. The Ba’athist state went to extraordinary lengths to keep any potentially disloyal elements out of the officer corps once Saddam came to power. Iraq thereby cut itself off from a large proportion of the potential talent pool of military officers. Inside the corps, much evidence exists to suggest that loyal incompetents were promoted ahead of suspect but able men. The effects which this had on officers’ efforts to acquire military skill have been disputed. Some officers, especially pre-Saddam entrants, retained international respect. Other accounts, however, suggest that other leaders exerted little effort in mastering their profession. Overall, therefore, it appears that it is at the lower entrance point to the funnel – in the NCO corps – that the main reason behind the Iraqi Army’s destructivity deficit is to be found.

There are five principal competing explanations for the Iraqi Army’s performance. Before outlining my own theory in depth, I will provide a brief description of their contentions as a contrast.

$A_1$: Arab Culture. Many analysts have claimed that Arab culture lie behind Iraq’s low destructivity (Pollack 2002). Alleged Arab cultural traits such as an excessive reverence for hierarchy (Pollack 2002), inability to admit to mistakes (Deady 2009), dissimulation and fatalism
(Kerry 2008) are said to have impacted negatively on the performance of lower level Iraqi leaders.

\[ A_2: \text{Parallel military organizations. The theory of parallel military organizations and military ineffectiveness was partly inspired by the case of Iraq (Quinlivan 1999). Many causal mechanisms could link the existence of the numerous parallel Iraqi Armies – the Regular Army, the Popular Army, the Republican Guard, the Special Republican Guard and the Fedayeen Saddam Hussein – to Iraq’s ineffectiveness as a military power. I examine the three most compelling – that parallel organizations weaken the rest of the Army by removing their best people (Quinlivan 1999), that they foster inter-service rivalry which lowers morale and cooperation between units (Quinlivan 1999) and that they prevent cross-branch training (Pilster and Boehmelt 2011).} \]

\[ A_3: \text{Other Coup Proofing Theories. Two other distinct causal mechanisms have been outlined linking coup proofing to military effectiveness, both of which can be linked to policies pursued by the Iraqi Army under Saddam. The first is confused chains of command. By this, military commanders take orders from two sets of superiors – often one military and one political (Brooks 2009). This can function as a ‘fire alarm’ to alert the Executive of a potential coup but hampers destructivity as it leads to delay and to coordination failures. The second is the rotation of senior personnel (Pollack 2002). This policy means that officers are frequently rotated among units so as to prevent them from forming relationships of trust with their subordinates which might be useful in a coup. The same trust which is thereby undermined, in this view, is also crucial for military effectiveness. I will examine the effects of both of these policies in turn.} \]
A4: Ethnic fragmentation. Iraq is often described as a country starkly divided between its three major ethnic groups – Sunni Arabs, Shi’ia Arabs and Kurds. Many analysts have claimed that these divisions have hampered Iraqi morale and cohesion and that this may lie at the heart of Iraqi military inefficiency (Hoyt 2009).

A5: Motivation. Iraq’s Army maintained a harsh disciplinary regime throughout Saddam’s rule (Sassoon 2011). According to my theory, this should have little effect on the Iraqi Army’s ability to demonstrate initiative even if it can help to hold fixed positions. By contrast, overuse of negative sanctions such as the death penalty should in fact discourage Iraqi troops from taking the initiative.

4.1 The Funnel Account

Military analysts have shown a high degree of consensus on the Iraqi Army’s principal tactical problems – an inability on the part of lower level leaders to show initiative, improvisation or an ability to react to unforeseen circumstances, especially when unobservable by superiors.

Writing of the Iraqi performance in Operation Desert Storm, Stephen Biddle writes:

“The Iraqi command system was rigid and centralized, with a nearly complete absence of initiative among junior officers and little ability to operate independently in small units. This left them unable to make anything of their depth and reserves: deep, reserve-oriented, modern-system defenses require soldiers and junior leaders to operate autonomously. The Iraqis proved systematically incapable of this in 1991.

Perhaps the most glaring illustration was their inability to provide tactical warning of attack. The observation posts and covering forces at the forward edge of a deep defense are necessarily small, exposed detachments operating far from the main defenses: since at least 1917, all Western armies have relied upon them to provide the main positions to their rear with warning of attack. Ideally, these covering forces serve other functions as well (such as stripping away hostile reconnaissance elements, slowing attacker’s momentum, or canalizing the assault), but the minimum task they must
perform is to notify the main defense of an attacker’s approach. While straightforward in principle, this requires a combination of discipline and independence: small, dispersed teams not under direct observation by higher command must carry out orders in the face of greatly superior enemy forces and often must maneuver to break contact and fall back before being overrun. The Iraqis in 1991 regularly failed to accomplish this.” (Biddle 2004)

This fits with Kenneth Pollack’s description of Iraqi tactical abilities spanning all of Saddam’s rule. For instance, Pollack described Iraqi performance in the early years of the war with Iran in the following terms:

“Iraqi forces were often surprised by Iranian attacks, primarily because the Iraqis never performed adequate reconnaissance, even though in some cases the Iraqis apparently had picked up indications of the attack from signals intercepts. Iraqi tactical formations rarely sent out patrols to see what was happening in the sector immediately in front of them, let alone long range patrols to try to determine where Iran was massing forces for an attack….The Iraqis also made it relatively easy for the Iranians to break through their defenses. Their failure to develop effective night-fighting capabilities, or even to take adequate security precautions at night, regularly gave the Iranians a key advantage in every breakthrough battle….The relative ease with which Iranian attacks were able to penetrate Iraq’s frontlines was particularly problematic because the Iraqis had great difficulty reacting quickly to unforeseen developments….When counterattacks did materialize, they were cumbersome frontal assaults…If the Iranians did not fight by the ‘book’ (that is, the Iraqi ‘book’), the Iraqis did not know what to do and usually either continued trying to overcome the Iranian stratagems with ever greater doses of firepower or would panic and run. Overall, the Iraqis simply did not learn from one battle to the next.” (Pollack 2002)

As with the British Army in the World Wars, a lack of skill at the tactical level led to increasing micromanagement by the Iraqi Army’s Senior Leadership. As Pollack writes:

“As the war progressed, Iraq’s senior officers, despairing that their subordinates would ever learn to use tactical maneuver, began to plan counterattacks more carefully to employ maneuver at an operational level…..Only by means of such close attention were Iraq’s senior military officers able to employ even a limited form of maneuver warfare to defeat Iranian attacks.
There was a limit to how much even the constant scrutiny of the general staff and corps commanders could do to improve Iraqi military effectiveness. For example, the general staff and their corps headquarters got very good at reacting to Iranian assaults, quickly beginning the laborious effort of shifting strategic reserves from elsewhere along the front. However, Iraq’s tactical leadership reacted frustratingly slowly. Iraqi junior officers showed little initiative in moving tactical reserves to block or counterattack Iranian assaults, and it invariably required the intervention of higher authority to get the reserves moving” (Pollack 2002)

Summarizing Iraqi military performance in all of Saddam’s wars, Pollack concludes:

“With regard to Iraqi generalship, no clear pattern emerges. In some cases, Iraqi strategic leadership was quite good, such as in the latter half of the Iran-Iraq war. Likewise, during the latter half of the First Kurdish War, the entire Second Kurdish War, and the Gulf War, Iraqi generals performed adequately; if not well….At other times, its leadership was miserable.

By contrast, Iraqi tactical performance remained constant. Regardless of the opponent or the situation, Baghdad’s junior officers performed very poorly. Iraqi commanders from platoon to brigade (and often division) level repeatedly showed little aggressive initiative, little willingness to innovate or improvise, little ability to adapt to unforeseen circumstances, and little ability to act independently. Iraqi forces were virtually oblivious to tactical maneuver and reacted poorly to enemy maneuvers, often failing to do anything at all in response.” (Pollack 2002)

In the terms of the theory chapter, Iraqi lower level leaders lacked the ability to use private information about the battlefield situation for the benefit of the Army as a whole. As with the British Army on the first day of the Somme, the senior Iraqi leadership did not have sufficient confidence in either the motivation or the skill of its subordinates to exercise initiative and so resorted to damaging micromanagement (Pollack 2002).

As with the British Army of the early twentieth century, the problem lay in deviations from the ideal type of a broad funnel of talent going into the NCO and officer corps. The root of this problem, however, differed from that of the British.
The peacetime British Army before World Wars One and Two could in theory have recruited from any section of a near-universally literate population. With a political system which had been stable for over two hundred years, British leaders did not need to keep one eye on the possibility of being overthrown by the military officers they promoted. The British Army’s funnel was constricted more by the very good alternative options open to potential officers and NCOs at the point of entry to the Army combined with the miserable prospects for those retiring in middle age.

With Iraq, the problem was the opposite.

### 4.1.1 Enlisted Men to NCO Funnel

Iraq’s literacy rate was first recorded in 1946 as a little over 9%. Over the following decades, it crept up to just over 30% the year Saddam obtained power (1979). In the 1980s, Saddam launched a campaign to eradicate illiteracy (more of which later), but with mixed results. The Iraqi Government’s own figures purported to show a literacy rate of over 70%, but these are doubted by most outside observers. The United Nations put the figure at just under 40% in 1985, the last pre-Desert Storm year for which data is available (Banks 2011). After 1990, Iraq’s constrained resources through sanctions lowered education spending and brought the growth in literacy to a shuddering halt (Velloso de Sanstisteban 2007).

Development economists note that the reasons for Iraq’s persistently low literacy over the time period are common to many developing countries, both democratic and autocratic. Democratic India, for instance, is another good example of the same phenomenon (Youssif 2012). Iraqi Governments, both Ba’athist and pre-Ba’athist, deliberately chose to concentrate spending
on tertiary education at the expense of the primary education which would have raised literacy and had a higher social return. This formed part of a conscious strategy to please the politically influential upper and upper middle class who benefited disproportionately from university as opposed to elementary school spending. In this, Iraq was little different to, for instance, democratic India. As a consequence, moreover, Iraq had a small number of very well educated people and a large number of very poorly educated people (Youssif 2012).

In terms of security and defense, this explains why such an underdeveloped country still had sufficient scientists to mount weapons of mass destruction programs in spite of very basic failings in education elsewhere.

It also accounts for why the Iraqi Army’s officer corps was not damaged by illiteracy – at least directly. In order to become an officer in the Iraqi Army, it was necessary to fill out an application form and sit a written test. Thus all Iraqi officers – except, possibly, for those awarded an emergency ‘battlefield commission’ in wartime – were able to read and write. Predominantly from Iraq’s urban middle class – the sons of small traders and junior public officials (Metz 1988) – their level of education was in fact relatively high, as noted by Woods⁴. Analysis of an English translation of an Iraqi Division Level Operations Manual, for instance, gives it a Flesch readability score of 45.2 and a Flesch-Kincaid grade level equivalent of 11.2, almost indistinguishable from a similar US military publication from the US Army’s School of Armor in Fort Knox, which scores 47.3 on the Flesch measure and has a grade equivalent level of 11.8⁵.

⁴ Interview of Kevin Woods by the author
Biddle and Long’s concern that illiteracy would make it harder to ‘draft and carry out instructions for moving thousands of soldiers over multiple routes to converge at a distant point at the same moment’ (Biddle and Long 2006) is overblown in the case of Iraq. The officers responsible for such instructions in the Iraqi Army had more than sufficient education to be able to do so successfully. Indeed, as Kenneth Pollack pointed out, the Iraqi Army’s logistics were fairly impressive (Pollack 2002).

Rather it is above all in the absence of a highly skilled NCO corps that Iraq’s low levels of literacy had their most debilitating effects on destructivity.

Most Iraqi NCOs were selected by their officers on the basis of their ability to impose discipline on the enlisted men. There was certainly no equivalent of the German Unteroffizierschulen. As noted above, there was an NCO academy at Mosul, but only a minority of NCOs were actually sent there⁶. In fact, these NCOs were then intended to help train the others. Consequently Iraqi NCOs did not go through a universal and comprehensive system of military education such as the German Army had pioneered in the nineteenth century and as the United States had adopted after World War Two⁷.

Very little responsibility was therefore devolved to NCOs in the Iraqi Army. Iraqi NCOs may often have been very brave and were proficient in executing a standard set of tasks, such as firing and maintaining their weapons, but they had very little theoretical military knowledge which might have allowed them to use their own initiative in unforeseen circumstances. The

the subject matter of the US passage is more abstract almost certainly accounts for the small difference in the United States’ favor

⁶ Interview by the author with Major General Aladdin Hussein Makki Khamas
⁷ Interview by the author with Major General Aladdin Hussein Makki Khamas
Iraqis, like the British in World War One, attempted to compensate for this deficiency by creating a top heavy Army with a high ratio of officers to men. However, with limits on the size of the officer corps imposed by the same lack of literacy and, as we shall see, political restrictions, this solution could only go so far.

In interviews with Dr Woods and his team, Major General Aladdin Hussein Makki Khamas, former director of the Iraqi Defense Ministry’s Directorate of Combat Development, effectively head of training for the Iraqi Army, pointed to the deficiencies of the Iraqi Army’s NCO corps as a key inhibitor of Iraqi fighting effectiveness:

“We relied more heavily on officers than NCOs…When the Army started to expand in the 1980s, the importance of NCOs diminished and more emphasis was placed on the officer corps….We could not trust them (the NCOs) - not all of them, but most of them….We had a saying “If you want something not to be achieved, give it to an NCO”. The status of NCOs was not as high as it should have been, and this was a bad thing for the Iraqi Army….Because we relied so heavily on our officers, our losses were much higher than any other Army in the world.” (Woods 2011)

Without good NCOs, the Iraqi Army’s ability to implement the dispersed formations vital to Biddle’s ‘modern system’ was stymied. There simply would not be sufficient officers to lead many dispersed small teams of either attackers or defenders. The German Stosstruppe detachment, the pioneering small unit of the modern era, consisted of eight enlisted men and one NCO (Samuels 1995). Without a trustworthy NCO corps, the Iraqi Army did not have enough junior officers to make the independent operation of such small units work. Denser formations were essential to maintain the officers’ ability to direct both enlisted men and NCOs, with baleful results.

As Makki noted:

“Our system of command and control was strictly centralized, during the first stages of the Iraq- Iran war. Although the centralization was relaxed a little towards the end of this war, yet it stayed centralized, and troops needed very detailed orders to cover almost all possible situations that could arise in the field. Thus if an unforeseen situation develops, troops needed a decision from the next upper command echelon. This required

8 Interview by the author with Major General Aladdin Hussein Makki Khamas
that a successful commander on all levels should be in a well forward command post to be able to monitor the situation himself and be able to give appropriate orders to follow up or to deal with developing situation and to ensure the right fulfillment and execution of the commanders plan.

In any case the army wouldn’t have enough number of junior officers to fulfill the task of leading very small groups such as sections or squads. The lowest organizational echelon to lead, was the platoon or equivalent…

Such initiatives on the lower levels we lacked, but the nature of armies in the Middle East at that time (except perhaps the Israeli army) was the deciding factor. I hope that the new Iraqi army will take this factor into consideration, and pay great attention to establish a well-educated NCO corps.

As the above quote makes clear, General Makki and other Iraqi Senior Officers were well aware of the need for good NCOs, but considered that the level of basic education afforded the average Iraqi prior to entrance into the Army was simply an inadequate foundation for a good NCO military education:

“The moral fiber and level of education of the average Iraqi was not high. This is where the NCO corps came from….Of course we wanted to raise standards and have educated NCOs. The NCO school in Mosul existed even before the war, but it was not enough….

WOODS: Did the relatively low level of education amongst the NCOs act as a limiting factor on the execution of maneuver warfare?

MAKKI: Yes, because the truth is that the citizenry of a nation has to have a higher level of education in order to create a modern army, because a modern army is a scientific army. This was a problem for Iraq.” (Woods 2011)

Nor can Makki be accused of trying to deflect the blame for the Iraqi Army’s performance from the officers to the NCOs. As Director of Combat Development, he was responsible for both the NCO and the officer corps’ professional development (Woods 2011).

Moreover, he made quite clear that similar deficiencies amongst NCOs were common to all

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9 Interview with Major General Aladdin Hussein Makki Khamas by the author
Middle Eastern militaries including the Iranians but with the exception of the Israelis. Given that Iraq’s literacy rate was typical of the region at the time, but that Israel was approaching universal literacy, this is not surprising.

Moreover, other sources confirm Makki’s estimation of the Iraqi Army’s NCO Corps. A manual of the Iraqi Army’s tactics and organization, designed for internal use and written by a Colonel of the Iraqi General Staff had a similarly low view of the NCO corps. For instance, in the section on patrolling, a key Iraqi weakness in Pollack’s view, the manual recommends contact patrols of ‘at least’ 15 men led by a Junior Officer. However, smaller patrols of 3-8 men should be carried out only if the NCO is ‘competent’, a tacit admission that many NCOs were not.

As we have seen in the case of Germany and to a lesser extent Britain and the United States, the children of upper or skilled working class parents are often the main source of non-commissioned officers. A good NCO corps requires that this section of the population both have a decent basic education and the incentive to join the military.

In the case of Iraq, however, low levels of basic education outside the upper and upper middle classes created what one development economist called ‘severe skilled labor shortages’, especially in the strategically vital oil industry. Wage data are not available for Iraq in the time period, and given government control of the ‘commanding heights’ of the Iraqi economy, would not be an entirely accurate indicator of skill shortages in any event. Nonetheless, there is evidence in the form of other observable indicators – for instance, university graduates maintained an exemption from the draft even at the height of the Iran-Iraq war. An Iraqi from the ‘NCO-capable’ classes who was literate, however, did vastly better to acquire a skill which could be

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10 CRRC-SH-AADF-D-000-597, ‘Overview of Iraqi Army Basic Tactics and Military Organization’, p127-129
used in, for instance, the oil industry than to serve as an ‘awal’ in the Iraqi Army. As the Iraqi-born economist Bassam Youssif pointed out:

“What the country needed…were skilled workers and middle managers more than professionals and scientists. According to an estimate made by the Ministry of Planning in 1977, a shortage of roughly 68,000 ‘supervisory and skilled workers’ and 94,000 ‘semi-skilled workers’ was expected in 1979. The rapidly rising enrollment in vocational education surely worked to alleviate some of the labor shortages, but the conscription of large numbers of males into the armed forces after the start of the Iran-Iraq war in 1980 further exacerbated the shortages. Indeed, by the early 1980s, skilled labor shortages were so acute that the Iraqi government was compelled to stipulate that new projects could not use labor-intensive methods of production.” (Youssif 2012)

General Makki, reviewing the Army’s recruitment performance, concurred:

“Finishing high school Iraqis can join the medicine college, the college of law and political science and the military college (academy). Now we can ask, why would a high school graduate who can join the military academy to be an officer, why would he want to be an NCO? (Noting that there was no NCO college or school), so the NCOs for a long period of time were derived from the regular soldiers who stayed for a long time in the Army and were promoted to be corporals, sergeants, sergeant-majors and Warrant Officers. This is why I say that their education was not as high as one would like. Not so many aspiring young people wanted to be NCOs. Also the difference in pay and privileges assigned to officers and NCOs. While most officers were from the middle and upper classes of society, the lower class and higher lower class was the source of the soldiers and the NCOs.

At the height of the Iran-Iraq War, the difficulties in recruiting literate NCOs were compounded by the demands of the war economy. Skilled workers were either exempted from military service altogether or put to work in military workshops making and repairing Iraqi munitions.
Iraqi standing orders captured by the US Army after the fall of Saddam in 2003 provide the best evidence of the educational attainment levels of the Iraqi Army’s NCOs. An outline of the commander’s rights and responsibilities in the Nebuchadnezzar Division of the Republican Guard include the educational prerequisites for promotion. For promotion to the highest non-commissioned officer rank – that of Sergeant-Major (Rais Urafa) – only an elementary school certificate was required. More junior NCOs needed no educational qualifications at all\(^\text{14}\). Given that this was the elite and highest paid element of the Iraqi Army, this can be considered as the very highest amount of education an Iraqi NCO could have.

Saddam’s anti-illiteracy campaign of the 1980s was perhaps in belated recognition of the damage illiteracy was doing to Iraqi fighting effectiveness – however, it was too little too late and could not be sustained into the 1990s when sanctions began to bite.

Woods did make the claim that had Iraqi officers not been inhibited by a hierarchical culture from providing their NCOs with a better developed military education, Saddam’s Army could have successfully devolved more power further down the chain. Woods pointed out that the United States has successfully established NCO training schools for the current Iraqi Army and has consequently allowed many Iraqi NCOs to take the lead in joint operations effectively\(^\text{15}\).

Where this may be true of the current Iraqi Army, it is difficult to apply this retrospectively to Saddam’s Army. For one, Saddam’s Army was larger and for the most part outside opportunities for individuals with a decent education were higher. Moreover, Iraqi officers’ reluctance to take the experiment of providing NCOs with a higher level of military

\(^{14}\) Nebuchadnezzar Forces Command, Republican Guards: Standing Orders. CRRC-SH-RPGD-D-000-481, p14

\(^{15}\) Interview of Kevin Woods by the author
education and devolving power to them is at the very least comprehensible in light of the low levels of literacy in Iraq at the time. As General Makkis’ quote makes clear, Iraqi officers would have liked to have been able to do so but did not believe it was possible. Moreover, it is not clear ex ante why nominally socialist Iraq, under the leadership of a humbly born President, should be considered more culturally hierarchical than Imperial Germany, with its multitude of ruling houses and landed aristocracy.

This caveat aside, the causal arrow leading from low literacy to low destructivity runs through the Saddam-era NCO corps. Iraq for most of its history concentrated on tertiary education for the upper and upper middle classes at the expense of basic education for the masses. Saddam’s anti-illiteracy campaign of the 1980s was insufficient to undo the damage this longstanding policy did to Iraqi military effectiveness. As a result, the Iraqi enlisted men from which NCOs were drawn contained a large number of illiterate or semi-literate individuals. The Iraqi military leadership judged this stratum incapable of supporting a Western-style military education. Because of this, Iraq’s lower level formations were constrained to either send officers to do the job of NCOs, for which there were insufficient numbers and which greatly increased officer casualties, or to fight in concentrated, bunched up formations to allow officers to maintain tight command and control over their men. It was this process, more than anything else, which hindered Iraq’s adoption of the ‘modern system’ and condemned it to such mediocre performance against the United States and other adversaries.

4.1.2 The Officer Corps Funnel
Unlike Britain, Germany or the United States, Iraq most definitely belongs amongst the most coup vulnerable countries on the planet. Such countries – often found in the Middle East, Africa and Latin America – experienced a coup early in their independent history. Once a country has had such a coup, both military officers and other actors within society will rate the chances of a subsequent coup more highly. Because coups, as the theory chapter demonstrates, are largely about mutual expectations, this very belief itself fuels future coup attempts. These actors then further update their beliefs about the chances of yet more coups in an upwards direction, and so it continues. This vicious cycle has long been known to political scientists as the ‘coup trap’ (Londregan and Pool 1990).

Iraq exemplifies this phenomenon very well. The country itself was artificially created by the British from three former Ottoman vilayets (provinces) through the Sykes-Picot Agreement. The British installed a puppet king originating in the Hejaz in modern Saudi Arabia and related to the Jordanian monarchs. After crushing an early uprising against their rule, the British withdrew most of their forces from Iraq, preferring to rely upon air power, advisors and British-trained Iraqi officers to protect their interests in the country (al Marashi and Salama 2008). By contrast, however, Iraq soon entered into a phase of numerous coups.

On October 29th, 1936, Bakr Sidqi, the Army Chief of Staff launched the crucial first coup in Iraq’s history. This was followed by a remarkable seven further coups by 1941. The final one of these first eight coups in Iraqi history was mounted by the pro-German officer Rashid Ali and resulted in British military intervention and a rapid collapse of the Iraqi Army. There then followed a period of relative stability under the restored Hashemite monarchy until an association of field officers under General Qasim mounted yet another coup in 1958. This lit the spark for a
fresh series of coups – no less than eight coups ensued in the next ten years, finally ending in 1968 with the assumption to power of the Ba’ath Party under Hasan al-Bakr, with Saddam Hussein as one of his main enforcers (al Marashi and Salama).

The Banks data codes this as the last coup in Iraqi history, yet this surely underestimates the extent to which Iraq remained coup vulnerable thereafter (Banks 2011). For one, Saddam’s own assumption of power from his own mentor al-Bakr is not coded as a coup because al-Bakr technically stepped down voluntarily through ill health. However, it is suspected by many observers that Saddam forced al-Bakr out and that the latter’s unfortunate demise in 1982 was in fact the result of poisoning by Saddam’s agents (Yahia and Wendl 1997).

Banks, moreover, does not include unsuccessful coup attempts. It therefore misses out numerous attempts on Saddam by his officers. Early in the Ba’ath Party’s reign, of course, there would be precious little reason for officers to believe their rule to be much more secure than that of the numerous incumbents whom they had deposed in the preceding ten years. Two coups were therefore attempted in the early 1970s – one by a group of retired Generals led by Abd Al-Ghani in 1971 and one by the General Security Service led by Nadhim Kazza in 1973 (al Marashi and Salama 2008).

Following Desert Storm, Saddam’s regime entered a new phase of vulnerability. With sanctions imposed by the United Nations and successive US administrations strongly hinting their support for action from within Iraq to remove Saddam, military officers knew that potential coup plotters could have access to rewards for their followers- either in the form of the lifting of sanctions or direct US financial assistance- which the incumbent would not. Consequently, coups began to emerge even from those quarters of the Iraqi military which had previously been known
for their loyalty to Saddam. A group of officers from the Republican Guard attempted a coup in June 1992 under Sabri Mahmud. Just over one year later, Regular officers from Saddam’s own Takriti tribe also tried to overthrow him. Finally, in 1995, a group of officers from the previously pro-Saddam Dulaymi tribe under Muhammad Madhlum Al-Dulaymi moved against Saddam (al Marashi and Salama 2008).

Iraqi politics was unquestionably an extremely dangerous and Machiavellian business. In light of this, many of Saddam’s military policies outlined earlier such as parallel military organizations and dual command are quite comprehensible. However, as we have seen, it is difficult to see them as the key factor behind Iraqi military ineffectiveness – in part because they were not consistently applied throughout Saddam’s rule. The negative effects of Saddam’s efforts to secure himself in power against his own men made themselves felt most of all through the Iraqi Army’s officer selection and promotion policies. These policies constricted the funnel of talent into the officer corps and thus reduced the incentives of the Iraqi officers to master military skills.

In spite of Iraq’s reputation as an underdeveloped state, entrance to the Iraqi Army officer corps was in fact highly structured and organized. Iraq had all the formal trappings of a modern military selection and education system, with cadet colleges, a military academy, an NCO instructors academy in Mosul, a staff college and an equivalent to the US Army War College, the Hasan al-Bakr University of Advanced Military Science. In its own way, the Iraqi Army’s officer corps was also very selective. However under Saddam, the qualities selected for were increasingly not, as in other militaries, cognitive ability, leadership skills or military knowledge, but rather loyalty to Saddam Hussein. Saddam reasoned that if military officers had been prescreened for loyalty even before they entered the corps, then the chances of their mounting a
coup would be much lower. Thereby, of course, Iraq cut itself off from the services of individuals whom the Ba’ath Party apparatus had cause to suspect of disloyalty.

In order to enter into the officer training schools, a candidate had first to fill out numerous forms to gain clearance from Saddam’s numerous internal security organizations, including but not limited to the main security service the Mukhabarat. The final form was sent to the applicant’s local Ba’ath Party. This form contained a form about political leanings consisting of sixteen questions. Of these, the most important was question nine – ‘Did you belong to any political movement other than the Arab Ba’ath Socialist Party?’ The importance of this question was underlined by the fact that a footnote at the bottom of the form stated that anyone discovered to have lied about question nine would be hanged.

Once the local Ba’ath Party received the form, however, further checking was in order. The secretary-general of the Ba’ath Party in charge of selection into the military colleges would send a further form to the local branch requesting information about the applicant and his family. Information sought included the family’s political leanings, their reputation and their connection to the Ba’ath Party. Thus not only would individuals be rejected if they had had any personal connection with activities against the regime, but also if their families had been so involved. Presumably, even rumors that a candidate’s family had anti-Saddam leanings would suffice to ensure his rejection.

This information itself was rigorously checked. For instance, one candidate to a military college in the 1990s, although himself a committed supporter of the Ba’ath Party, had successfully concealed the fact that his cousin had been executed for resistance to Saddam fourteen years earlier. The failure of his local Ba’ath Party to notice this omission led to the
formation of an investigative committee into the breach of security, though no information is given as to the action taken against the offending party members.

In the early years of Ba’athist rule, some non-Ba’ath Party members were permitted to join the officer training system if they were considered ‘good material for conversion’. However, as Saddam consolidated his grip on power, only committed Ba’athists were allowed to become officers. Unlike Saddam’s other ‘coup proofing’ policies, this was intensified rather than dropped towards the end of the 1980s. Moreover, individuals who held, or whose families held, a card known as ‘Friends of the President’ – awarded by Saddam for especially meretricious sycophancy – were allowed to join the military academies even if they failed the entrance exam (Sassoon 2011).

Restricting the officer corps to members of the Ba’ath Party provided yet another layer of security for Saddam against a coup. As Joseph Sassoon described it, the Ba’athists functioned very much as a ‘club’ in the sense of Lawrence Iacconne and Eli Berman (Berman 2009). That is, the Ba’ath Party achieved loyalty among its members by compelling them to make costly up front sacrifices to screen out disloyal types and then to devote significant time and resources to mastering skills which would be useless to them if Saddam were no longer in power.

The sacrifices came in the form of the time and effort spent in order to rise through the various levels of the Party hierarchy. The Ba’ath Party recognized no less than ten different classes of member. The ‘entry’ level was as a ‘mu’ayyid’ or sympathizer. These were required to attend weekly meetings for intense training in Ba’athist ideology in order to graduate to the next level, a ‘nasir’ or supporter. According to Sassoon, the next stage would require between five and ten years of political apprenticeship as a ‘nasir mutaqaddim’ (advanced supporter), then a
‘murashih’ (candidate), then finally an ‘udhu mutadarrib’ (apprenticed member) before becoming a full or active member (an ‘udhu ‘amil’). Progression to higher levels such as ‘udhu firqa’ or division member required further years of intensive ‘political education’ leading to yearly evaluations of one’s qualities as a Ba’athist by one’s superior in the hierarchy (Sassoon 2011). This process left a vast paper trail, which made it clear that party members took the screening function very seriously. For instance, Sassoon quotes one Ba’ath Party internal document on party promotions as saying:

“...It is not sufficient for a member just to believe in the idea of the party, but what is required is total commitment and not simply a political affiliation...” (Sassoon 2011)

The content of this ‘political education’ illustrates the second component of a club – cutting off alternative options. Political education in the Ba’ath Party partly consisted of instruction in the history of Iraq back to Babylonian times, but, as Sassoon relates, ‘most research work by party cadres centered on the personality of Saddam Hussein and his achievements’ (Sassoon 2011). Party members devoted significant time to writing research and response papers based on Saddam’s most recent speeches. Saddam also wrote a number of novels over 700 pages long, such as ‘The Immune Castle’ and ‘Demons Be Gone’. These books were promoted as the ‘book of the month’ at Ba’ath Party branch meetings, with members tasked with writing review essays on them, presumably mostly positive (Sassoon 2011).

Quite apart from the enjoyment party members must have derived from mastering Saddam’s literary canon, such tasks in fact had a rational function in preserving Saddam’s rule. An individual who has invested his or her time in learning engineering or medicine or (most relevantly for this dissertation) military science, has a shot at prosperity regardless of who is in charge of the country. An individual, who, however, has based their career on mastering the
literary works of Saddam Hussein, has very few prospects if someone else is to seize power. Consequently, staffing the officer corps with individuals who have come through this Ba’athist club process made great sense from the point of view of keeping Saddam Hussein in power.

The evidence also indicates that political loyalties rather than military competence played a significant role in promotion within the Iraqi Army officer corps throughout Saddam’s reign. Increasingly this meant favoring not simply dedicated Ba’athists but in fact Saddam’s own relatives for military promotions.

Very few former Iraqi officers have spoken about life in the Saddam-era Iraqi officer corps. Those who have, however, paint a sometimes damning, at other times sympathetic picture of the effort levels of Iraqi officers to acquire military skills under Saddam.

One such officer is General Ra’ad Hamdani, an officer of the Iraqi Regular Army who was later transferred to command a Corps of the Republican Guard. Hamdani was considered one of Iraq’s more competent senior commanders, having received his military education, tellingly, in Jordan prior to Saddam’s assumption of power. Hamdani agreed to be interviewed by a team of researchers from the US National Defense University led by Lt Col Kevin Woods after 2003. In this interview, Hamdani points out that Saddam signaled early in his reign that political loyalty would override military competence as the basis for promotions.

“HAMDANI: He (Saddam) quickly gained the reputation of promoting young officers who were loyal Ba’athists instead of real professional soldiers.

…I watched as Saddam promoted Lt Col Hisham to Brigadier General, as well as to command one of the first line divisions. Another officer, Lt Col Khaled…was also promoted to brigadier general and became commander of the 3rd Division, our best. Another was a staff major, Tali Ad-Duri, who was made a full Colonel and commander of the 9th Division. Another was Mahmoud Shukr Shahin, promoted from Colonel to
Brigadier General and who became commander of the 6th Division. So these first four promotions were a major shock for the Iraqi Army. All were very dramatic promotions…

MURRAY (Interviewer): Did this have a large impact on the professionalization of the Iraqi Army, now that political loyalty became more important than military competence?

HAMDANI: This is correct. By the time we got to the war with Iran, the basic culture of the Army had changed because of Saddam’s actions. He ordered politicians to serve as Army commanders and promoted himself to the military rank of Field Marshall. He also emphasized the principle, a very dangerous saying, that as long as one was a Ba’athist he can always be a leader, since the Ba’athist is a natural leader.” (Woods et al 2011)

The effects which this had on the motivation of politically favored Iraqi officers to devote time and effort to learning military skills were described by Hamdani as follows:

“Saddam gave me the chance to stay with the Republican Guard longer, and I think it was for this reason; he needed a capable individual at the highest level. At the same time, he used to consider me like a school, in which he could train his relatives to be better officers. One day Saddam asked me: “I have two division commanders” – they were from his family – “here in the corps. I made them join the staff academy and one of them even joined the military academy. Why didn’t they turn out to be good officers like you?” My answer was: “Neither the staff academy nor the military academy makes the officer a good commander. A good officer is one who invests his time in studying at the staff academy so that he will be good. He uses the knowledge he acquires and adds it to his experience, his military experience. It is not the academy that makes him.” Besides, if someone, like a soldier, is motivated to be a soldier and to live like a soldier…professional and dedicated, this is the critical ingredient. It is not something that can be taught. Saddam could not understand the concept.” (Woods et al 2011)

Joseph Sassoon’s experience illustrates starkly the sheer laziness of politically favored Iraqi officers. Some years after the 2003 war, he interviewed a former Republican Guard officer. Commenting on the officer’s expansive girth, he remarked that he must be missing the extensive physical exercise afforded by the elite unit of Saddam’s regime. The officer laughed and claimed
that he had been in the same shape when on active service. The majority of the Republican
Guard’s officers he encountered devoted very little time even to basic physical fitness, let alone
military science, as they knew their personal and family contacts with Saddam’s regime were the
basis of their future promotions. Physical training exercises were sometimes stopped to allow
wheezing heavy smokers to catch their breath. These favored Republican Guard officers were
rushed through officer training, which was supposed to take four years and involve attendance at
both the military academy and the staff college, in nine months in order to be graduated in time
for special events such as Saddam’s birthday.\textsuperscript{16}

The effects of such a promotions policy on less politically favored officers are harder to
gauge. Kevin Woods, a former Lieutenant Colonel in the United States Army, judged the
‘professionals’ in the Iraqi Army – such as Hamdani and Makki- favorably, commenting that they
were of sufficient quality as to be able to fit into most Western militaries seamlessly.\textsuperscript{17}

There is little data on the relative proportions of ‘professional’ and ‘political’ officers in
the Iraqi Army over time. Indeed, it is not entirely clear how one would define the terms ex ante
Nonetheless, it is likely that by the end of the 1980s, the only non -Ba’athist officers remaining
would be holdovers from pre-Saddam days such as Hamdani or Aladdin Makki and those small
numbers of ‘independents’ still allowed to enter the academy in the early 1980s.\textsuperscript{18} Thus the
professionals are likely to have been a dwindling and ageing proportion of all Iraqi officers over
time. Even had they devoted themselves single-mindedly to the pursuit of military excellence the

\textsuperscript{16} Interview of Joseph Sassoon by the author
\textsuperscript{17} Interview of Kevin Woods by the author
\textsuperscript{18} Interview of Joseph Sassoon by the author
overall effect on Iraqi destructivity would thus have been outweighed by the influence of the politically favored officers.

However, it is important to note that some sources disagree with parts of the above analysis.

Aladdin Makki dissents to some degree from the view that political favoritism weakened the incentives of the Iraqi officer corps to master military skills. He points out that during the 1980s, all entrants to the officer corps were considered politically reliable, precisely because they had been through the elaborate pre-screening system described by Sassoon. Consequently, he claims that only military competence could serve to advance an officer’s career, once he was actually admitted into the corps.

Nonetheless, Makki also points out that good Ba’athist officers were given additional years of seniority on top of those they had earned through their performance in their qualifying exam. Moreover, he agrees that the exclusion of qualified individuals whose political loyalty to Saddam could not be relied upon not only deprived Iraq of their services but also deprived those who did enter the officer corps of stimulating competition.19

In short, the evidence suggests that Saddam’s vulnerability to a coup led to his adoption of politically motivated restrictions on promotions and especially recruitment within the officer corps. However, the evidence of the negative effect which this had on Iraqi destructivity is not as strong as for the effects of illiteracy on the NCO corps. While many Iraqi officers undoubtedly relied upon political favoritism rather than diligent skills acquisition to get ahead, there was a core of competent professional officers who did work hard and perform reasonably well.

19 Interview of Major General Aladdin Hussein Makki Khamas by the author
Moreover, the Iraqi Army officer corps’ literacy and educational levels were fairly high and its performance in logistics and other technical areas good. Undoubtedly coup proofing hurt the Iraqi Army’s performance, but low literacy hurt more. Many of the Iraqi officer corps’ apparent failings were in fact designed to compensate for weaknesses lower down the chain of command.

Having examined both entrance points to the funnel, let us now consider some alternative explanations for the Iraqi Army’s poor fighting performance.

4.2 Culture

Arab or alternatively Islamic culture is frequently cited by analysts as a key impediment to Iraqi fighting effectiveness. Of these works, the most influential is Kenneth Pollack’s Arabs at War, which began as his dissertation under the title ‘The Influence of Arab Culture on Arab Military Effectiveness’. However, Pollack’s final published work actually makes little attempt to link Iraqi or any other Arab states’ destructivity with traditional Arab culture or Islam. Pollack simply recounts exhaustively the military record of many Arab states including Iraq and notes certain frequently recurring similarities such as a lack of independent astute tactical leadership at the lower (presumably Junior Officer and NCO) level. How or even whether this is a consequence of Arab ‘culture’ is left unstated.

Pollack does, however, note certain possible mechanisms which previous analysts had described linking Arab culture to military ineffectiveness. These mechanisms are mostly habits of mind into which Arabs are socialized and which are presumed to inhibit military performance.

The first of these is a tendency towards hierarchy and paternalism. By this view, Arabs are said to be less likely than other cultures to challenge authority or to believe in the correctness
of independent action by subordinates. This is said to go along with a lack of concern among
those at the higher levels of an Arab hierarchy for those beneath them (Pollack 2002). Clearly,
this could undermine military effectiveness in many ways.

First, it would make the adoption of an ‘Auftragstaktik’-style command philosophy very
hard. Although Arab Junior Officers and NCOs may have superior local knowledge of their
sector of the battlefield, if Arab culture discourages the display of subordinate independence they
may be reluctant to use this knowledge effectively. Second, a lack of concern for subordinates by
superior officers- especially Junior Officers for enlisted men and NCOs – may make it hard to
induce risky effort on the part of the subordinates.

The second allegedly Arab cultural trait detrimental to fighting power is dissimulation
(Pollack 2002). Many examples are given by Pollack of Iraqi and other Arab officers deliberately
lying to their superiors about the battlefield situation (Pollack 2002) – claiming objectives had
been taken which had not been, denying retreats which had in fact happened. The officers thereby
clearly hoped to evade personal censure at the expense of distorting the flow of information to the
Army as a whole. A US observer stationed with the post-Saddam Iraqi Army quoted the Arabist
Margaret Nydell as follows:

“Arabs will rarely admit to errors openly if doing so will cause them to lose face.
To Arabs, honor is more important than facts (author’s italics).” (Deady 2009)

Mark Kerry, a US military advisor embedded with the post-Saddam Iraqi Army, put it
even more bluntly:

“Arabs possess a lot of traits that are incongruent with business, the military or
any other endeavor for that matter. Lying is a normal, integral, prevalent and perfectly
acceptable facet of Arab culture.” (Kerry 2008)
Indeed, many US observers have identified other apparently cultural traits which they claim have stymied Iraqi military performance. Although, of course, these observers do not have first-hand experience of Saddam’s Army, the habits of mind they describe are presumed to be deeply historically ingrained and so could also have been at play in the underperformance of the old Iraqi Army.

Of these, a major trait is alleged Arab ‘fatalism’. Analysts have spoken of the frequent use of the term ‘Inshallah’ (God willing) in Iraqi speech. This, it is said, denotes a culturally ingrained lack of belief in the effectiveness of one’s own efforts in changing the outside world. If Iraqi Arabs do indeed believe that the outcome of worldly events such as battles and wars are foreordained by God, then they may be less inclined than other cultures to learn military skills or to take personal risks in battle. In fact, alleged Islamic fatalism has also been fingered as a key factor behind many other political and economic phenomena such as the Middle East’s economic underdevelopment (Kuran 2011). As Kerry states elsewhere:

“I believe this one word (“Inshallah”) best sums up Iraqi cultural beliefs and the subsequent impediment to progress. Inshallah reflects Iraq’s cultural idiosyncrasies and explains one reason why Iraqis are slow, and sometimes seemingly unwilling, to rebuild their country” (Kerry 2008)

Evaluating the causal mechanisms supposedly linking Arab culture and Iraqi military ineffectiveness requires some distinctions to be drawn. Specifically, many of those who believe in the importance of Arab culture are undoubtedly accurate in their descriptions of Iraqi military behavior. Undoubtedly, Iraqi officers did indeed frequently falsify information about the battlefield and retain large amounts of responsibility far up the chain of command. What is more questionable is whether this truly results from a specifically Arab cultural mindset. With this in mind, let us now examine each of the cultural claims in turn.
First, it is not clear that the Iraqi Army’s practice of retaining a large amount of responsibility further up the chain of command is not the result of non-cultural factors. Recall from the British case that micromanagement often results from a lack of trust in the knowledge and skill of the lower level leaders on the part of their superiors. If Junior Officers and NCOs do not have enough military-specific knowledge to be able to divine the overall intention of their commanders, then commanders will quite understandably be reluctant to devolve responsibility to them. Pollack notes that other observers have seen a lack of proper training as the taproot of the Iraqi Army’s ineffectiveness, but points out that Iraqi Junior Leaders’ inability to demonstrate initiative persisted after the intensive training they received in preparation for their final offensives against Iran in the late 1980s (Pollack 2002). Yet this intensive training simply consisted of constant repetition of a small, set number of drills (Pollack 2002) rather than a long term, competitive process of acquiring theoretical and practical military knowledge along the lines of the Unteroffizierschulen or the Kriegsakademie.

Second, the organizational structure and performance of non-conventional Iraqi formations in the insurgency following the war are hard to square with the image of Arabs as culturally predisposed to hierarchy. In fact, the organization of the insurgency, based around a loose network of mutually supportive ‘cells’ without a single leader, has been extensively studied by systems analysts as a prime example of a flat, non-hierarchical ‘self-organizing system of systems’ (Lugosky and Dove 2011). Although many insurgent cells were based on a charismatic leader, these leaders would often use consultative decision making styles and share resources with other groups whom they did not control. For instance, US Special Forces veteran Richard Buchanan describes one day in the life of insurgent leader Jasim Muhammad ‘Abd Salih Al-Mashhadani in the following terms:
“Abu-Ali and Abu al-Darwa came before the evening prayer, then Abu Athir came after the evening prayer from another mosque. Abu Mustafa, Abu Ibrahim, Abu Fahad and Abu Hasan also came. We discussed several issues related to the ‘company’s affairs’. Abu Ahmad came with a friend. They had discussions with the others and left with a CD. We worked late with the computer and agreed to take it to Abu Ahmad tomorrow.” (Ricks 2012)

The experience of the Iraqi insurgency also makes it hard to credit another supposedly Arab cultural trait with fostering military inefficiency – dissimulation. In fact, the development of the lethal improvised explosive device by the Iraqi insurgency would have been impossible had insurgent groups not been able both to solicit and to receive candid feedback about operational performance.

As Buchanan relates, the insurgent leader al-Mashadanni began to experiment with IEDs shortly after the 2003 invasion. However, early models proved ineffective. Al-Mashadanni consequently farmed out his IED models to other insurgent groups on condition that they provide him with accurate feedback on their performance, on why they thought the devices were or were not working and with videos of the devices in action which they could analyze and pass on to yet more groups. Honest and accurate feedback about IED performance, of a type of which some cultural theorists might think ‘dissimulating’ Arabs incapable, allowed al-Mashadanni and other insurgent groups to produce very lethal and cheap IEDs in a very short space of time (Ricks 2012).

In fact, insurgent organizations do not require the same degree of universal literacy in their host society in order to work well as armies do. There are many potential reasons for this – first, insurgent organizations do not have to be as large as regular Armies. An insurgent manual posted on an Islamic extremist website at the time of the invasion of Iraq in 2003 makes this
clear. This calculated that the ‘Crusaders’ could be expelled from Baghdad with an insurgent force less than one tenth the size of the regular Iraqi Army garrison of the city\textsuperscript{20}. Given that insurgencies require less manpower, they can perhaps be choosier about the educational requirements of their recruits than Armies can. This indeed is consistent with Robert Pape’s findings about the demographics of suicide bombers in Lebanon and Palestine (Pape 2005). Second, it is also possible that the operations carried out by insurgents and terrorists are militarily simpler than those of Armies and so require a lesser degree of military skill. Surprise, rather than many years of military education, is the key to success.

Whatever the reason why insurgent groups were capable of initiative and decentralized cooperation which eluded the Regular Iraqi Army, these characteristics are hard to square with the idea that Arab culture is inherently less capable of delegating authority or eliciting honest feedback. What exactly had changed about Arab culture in the few months between the end of the conventional war and the beginnings of the Iraqi insurgency? Why, moreover, would this culture encourage flat organization and honest communication for insurgents and terrorists but not for regular soldiers?

The final Arab cultural trait supposed to hamper destructivity – fatalism – is a tougher claim to evaluate. The World Values Survey and Gallup have attempted to use survey data to measure the extent of this belief. Questions have been asked in which respondents have been asked to rate, on a scale of 1-10, the extent to which they personally control their own fate, with 10 being the highest degree of personal control and zero the lowest. Gallup add a theological dimension to the question by explicitly framing the question as being about one’s own level of

\textsuperscript{20}Recommendations and Instructions for the Mujahideen in Iraq, Islamic Information Center, p11. CRRC SH-MIISC-D-000-479, p11
control relative to God’s (Acevedo 2008). This has led to a lively debate within sociology about Islamic fatalism which has yielded distinctly mixed results. Unfortunately for the purposes of this work, neither the World Values Survey nor Gallup surveyed Iraq. However, polling of other Arab and Muslim countries has yielded weak evidence at best for the idea of Islamic fatalism.

Muslim countries in general have been shown to have a higher mean level of fatalism than Christian ones. However, the two means are well within one standard deviation of one another. Moreover, some of Iraq’s neighbors actually score lower on fatalism than some Western countries – for instance, Jordan’s average ‘fatalism’ rating is lower than that of both the UK and France (Acevedo 2008). It must also be borne in mind that the phrasing of the World Values Survey’s question – how much does the individual feel his or her efforts contribute to success in life – very much skews in favor of finding poor and/or autocratic countries to have high ‘fatalism’ levels. If someone living in Hosni Mubarak’s Egypt does not believe the course of his or her life depends much on his or her effort, is this Islamic fatalism or a realistic appreciation of one’s situation in a repressive and underdeveloped country?

Using Gallup’s more nuanced questioning with a specifically theological slant; Gabriel Acevedo tried to determine whether Muslims are more prone than Christians to fatalism within the same country. Controlling for other factors such as education and socio-economic status, he found decidedly mixed results – Muslims exhibit higher theological fatalism than Christians in Lebanon but not Indonesia (Acevedo 2008).

In short, then, although it is hard to tell whether Iraqi Muslims are more prone to theological fatalism than other cultures, suggestive evidence from other Arab and/or Muslim states cast doubt on this. Moreover, attributing Iraqi military ineffectiveness to fatalism has an air
of post-hoc reasoning – had Iraq enjoyed a highly destructive Army, one might have attributed this to the fearlessness which comes from believing all earthly events to have been preordained by God. Only once we know that Iraq had an ineffective Army do we look retrospectively to an Arab or Islamic fatalism to explain it.

4.3 Parallel military organizations

Iraq is one of the motivating cases behind the theory that parallel military organizations undermine destructivity (Quinlivan 2009). During his reign, Saddam created and expanded a bewildering variety of parallel ‘anti-army’ armies. Alongside the Regular Army, the Ba’athists established a ‘Popular Army’ of party members as a parallel militia. Not content, like Hitler, with two armies, Saddam also created an initially small elite personal Army known as the ‘Republican Guard’. Even this force, however, began to lose the dictator’s trust after the Gulf War of 1991 and was supplemented by yet another parallel force the ‘Special Republican Guard’. Finally, for good measure, in the years between Desert Storm and the US invasion of 2003, Saddam created a fourth and a fifth parallel military formation in the form of the ‘Jerusalem Army’ and the ‘Fedayeen Saddam Hussein’ under the command of his son Qusay Hussein (Sassoon 2011).

Iraq is not exactly a critical ‘most-likely’ case for the theory that parallel military organizations undermine military effectiveness, given that many other factors were also potentially working to reduce Iraqi destructivity. However, as a militarily ineffective state with numerous military organizations, Iraq is close to the ideal type for the parallel military organizations theory. It follows that if a convincing causal mechanism linking the existence of these organizations per se to the poor performance of the Iraqi military as a whole cannot be
established here, then the theory that parallel military organizations undermine destructivity must be cast into doubt.

As outlined in the introduction, there are three main mechanisms linking parallel military organizations to military effectiveness. Let us now examine them in turn with respect to Iraq.

The first mechanism suggests that parallel military organizations undermine military effectiveness by stripping regular formations of their best men. In the Iraqi context, this is unlikely to refer to either the Popular Army or the Fedayeen Saddam, both of which were barely trained militias rather than elite formations (al Marashi and Salama 2008). Instead, if the Iraqi Regular Army were stripped of their best men, it was to join the Republican Guard or the Special Republican Guards. These organizations were considered the best trained, equipped and selected formations in Saddam’s Iraq (Sassoon 2011).

If the existence of the Republican and Special Republican Guards did indeed strip the Regular Iraqi Army of its best men, we should expect to see a number of things. First, most obviously, the Regular Army’s formations should exhibit lower levels of destructivity and often collapse against enemy forces. In all three of Saddam’s wars this did indeed frequently happen (Pollack 2002). However, the second observable implication of this mechanism is less obvious.

Suppose that there is a certain distribution of fighting ability across the population of a given country. Suppose also that all states have an equal amount of good and bad fighters but in some states the best fighters are distributed evenly across all military units (call them type A states) and in others they are concentrated disproportionately in a few formations (call them type B states). It is not immediately clear why the type B state, like Iraq, would exhibit lower overall fighting ability simply because the distribution of fighting ability across units is uneven. The
answer would surely lie in the strategy pursued by the type A state. This state would concentrate first on the enemy’s weakest formations and would only engage the enemy’s strongest forces when they are heavily outnumbered and can be more easily mopped up. The implication is that the strongest units of the type B state would be better than any one unit of the type A state. Furthermore, the type A states’ forces would avoid contact with the type B state’s elite formation until they had achieved a decisive numerical and firepower advantage over them. If, on the other hand, one state’s forces target the enemy’s elite formations directly and defeat them relatively easily, then it is far more likely that some other variable besides parallel military organizations which is driving the difference in destructivity between the two.

Such was indeed the case with the United States and the Republican Guard in the Gulf War of 1991. The main thrust of the US ground assault into southern Iraq fell against the best Republican Guard formations. Although these formations put up far stiffer resistance to the Americans than the Regular Iraqi Army did, they still suffered a decisive defeat and inflicted few casualties on the attackers relative to their own (Pollack 2002). To attribute Iraq’s thrashing in Desert Storm to the existence of parallel military organizations is to claim that the elite troops of the Republican Guard, who were unable to stop the US invasion when concentrated together and equipped with Iraq’s best weapons, would have done better had they been parcelled out equally across a single united Iraqi Army. This appears unlikely. The Regular Army would undoubtedly have performed more effectively than it did, but it could not have affected Iraq’s overall destructivity.

Now let us consider the second possible causal mechanism linking parallel military organizations to Iraq’s military inefficiency – inter-service rivalry leading both to low morale in
the less-favored units and to difficulties in achieving cooperation between different military organizations.

There is little question that the Regular Iraqi Army had good reason to dislike and distrust the Republican Guard. Unlike Hitler’s Germany, where the Wehrmacht and Waffen-SS enjoyed the same pay and conditions, the Republican Guard were significantly better paid than their Regular counterparts (al Marashi and Salama 2008). The Guard also enjoyed special perks and privileges and was marked out as higher status by the regime (al Marashi and Salama 2008).

Nonetheless, it is hard to trace low Iraqi destructivity directly to inter-service rivalries between the Republican Guard and the Regular Iraqi Army.

For one thing, as with the Waffen-SS and Wehrmacht on the Russian front in World War Two, the experience of fighting together against the common Iranian foe is said to have created many common bonds between the Republican Guard and the Regular Army. Again as with the Waffen-SS, the Republican Guard was frequently deployed in a ‘fire-fighting’ role to stop dangerous Iranian breakthroughs and rescue Regular Army units in trouble (Pollack 2002). This suggests, first, that regime favoritism did not prevent the Guard and the Army from cooperating successfully and, second, that the Guard provided valuable services to the Regular Army which could have offset the demoralizing effects of the special treatment they received. Moreover, in spite of the regime’s favoritism towards the Guard, Saddam was quite prepared to sacrifice some of the Guard’s divisions to cover the Regular Army’s retreat from Kuwait in 1991 (Pollack 2002).

Finally, even had inter-services rivalry between the Republican Guard and the Regular Army been intense, the impact of this on Iraqi military performance at the small unit level would have been limited by the fact that the Guard and the Regulars mostly fought in discrete large
formations separate from one another. Until the end of Desert Storm, the Republican Guard was integrated with the Regular Army at the Corps level, meaning that only a tiny proportion of Republican Guards and Regular Troops would have fought alongside one another\textsuperscript{21}. After the war, the Republican Guard was assigned its own Corps and integration was at the Army level\textsuperscript{22}, so that the proportion of Guards and Regulars fighting alongside one another would have dropped further still.

The final mechanism linking parallel military organizations to fighting effectiveness revolves around the difficulties which this causes for cross-branch training and cooperation. As indicated above, however, this mechanism confuses parallel military organizations with different service branches. In the case of Iraq, both the Republican Guards and the Regular Army had infantry, mechanized infantry, armor and artillery\textsuperscript{23}. Both organizations received training in combined arms tactics within their respective ranks (Pollack 2002). The Republican Guard was given superior equipment to the Regular Army, but this need not have affected cross-branch operations within either organization, or even necessarily cooperation between different branches of the different organizations. From Saddam’s perspective, moreover, it would have made little sense to give all of one type of armament to the Republican Guard and all of another type to the Regular Army. Suppose the Republican Guard had had all of the heavy equipment and the Regular Army only small arms – the Republican Guard itself would then have been unstoppable in a coup had a leader emerged from within its ranks. Indeed, a number of coups were indeed attempted from within the Republican Guard following Desert Storm, showing that Saddam could

\textsuperscript{21} http://www.globalsecurity.org/military/world/iraq/rg.htm
\textsuperscript{22} http://www.globalsecurity.org/military/world/iraq/rg.htm
\textsuperscript{23} http://www.globalsecurity.org/military/world/iraq/rg.htm
not take the loyalty of any one parallel organization for granted\textsuperscript{24}. Under these circumstances, concentrating all of one branch (especially heavy equipment) in one organization would have made no sense from either a military effectiveness or a coup proofing perspective.

In short, then, finding a direct link between the existence of parallel military organizations and the ineffectiveness of Iraq’s Armed Forces as a whole is difficult. There is very little support for the cross-branch training mechanism. The morale and cooperation argument is more debatable, but the Republican Guard and Regular Army did demonstrate an ability to cooperate, and specifically the Republican Guard demonstrated a willingness to sacrifice itself for the Regular Army which suggests that this argument has been overblown. The argument that the Republican Guard lowered overall fighting effectiveness by stripping the Regular Army of its best men is also dubious. The Republican Guard itself, which supposedly concentrated the cream of the Iraqi forces in one organization, was decisively defeated by the US Army and Marines in Desert Storm. If the best Iraqi forces could not stand against their opponents, why would one imagine that Iraq as a whole would have done better had they been spread throughout a single Iraqi Army?

A final remark should also be made. The expansion of parallel military organizations by Saddam Hussein was clearly linked in many cases to his fear of a coup. However, another driver was dissatisfaction with the performance of the Regular Army. For instance, in the middle stages of the Iran-Iraq War, Saddam expanded the Republican Guard, previously his purely personal bodyguard, into a major fighting force to take on the Iranians because the Regular Army had performed so poorly before (Pollack 2002). It is not uncommon for political leaders dissatisfied

\textsuperscript{24} http://www.globalsecurity.org/military/world/iraq/rg.htm
with the performance of existing units to try to make such a ‘fresh start’ with new formations, even if there is no danger of a coup. Winston Churchill, a leader whose domestic position could not have been more different than Saddam’s, sponsored the creation of numerous special formations such as the Commandos, the Airborne Divisions, the Chindits and the Long Range Desert Group specifically because he was disappointed with the performance of conventional British units (Horn 2005). This introduces the possibility of endogeneity into results such as Pilster and Boehmelt’s – military ineffectiveness may in fact cause the creation of parallel military organizations more than the opposite.

4.4 Other Coup Proofing Theories

Of the mechanisms proposed linking coup proofing behavior to military ineffectiveness, two merit particular attention in the Iraqi case. The first of these is the practice of dual command.

The practice of dual command originates with Saddam’s political idol, Joseph Stalin (Beevor 1998). Under this system, non-military specialist advisors from the ruling party – commissars – are posted alongside military officers at most levels of command. The commissar and the officer have joint command of the military unit to which they are assigned, which means that all orders to subordinates in order to be valid must come from both one’s military superior and the political commissar. The political commissar, as a member of the ruling party, has an interest in the maintenance in power of the existing ruler from whom he receives rents. Political commissars may also be equipped with little in the way of transferable skills- they are often ‘educated’ only in the ruling party’s ideology and thus have few credible alternatives if the current regime is deposed. Commissars are thus very unlikely to countersign orders to move against the current ruler. If the military leader attempts to order a coup without the commissar’s
agreement, the commissar can serve as a ‘fire alarm’ to alert forces loyal to the current Executive. Junior officers are also unlikely to obey orders coming only from the military leadership as they realize that to do so would invite almost certain punishment. Under dual command, junior officers would obey orders coming from their military superiors alone if and only if they judge a coup both imminent and very likely to succeed. Given that they know other Junior Officers are also under dual command, this is a conclusion they are unlikely to reach. Dual command is thus a very effective way for a ruler to prevent a coup, which explains its appeal to Saddam Hussein (Hoyt 2009).

At the same time, however, dual command has obvious problems for military effectiveness. If the Army is fighting against a foreign enemy, the additional delay in gaining approval for a course of action from two separate superiors can prevent necessary decisive actions from being taken. More subtly, dual command can recreate coordination problems amongst subordinates that the military hierarchy is designed to solve. Suppose, for instance, two Junior Officers are debating how to attack an enemy position, one favoring plan A and one favoring plan B. Both are better off if a common plan is agreed upon, but each would clearly prefer their own solution be chosen. A single commander, by coming down clearly on the side of either plan A or plan B can prevent a coordination problem whereby they both execute their own favored plan independently of each other to the detriment of both. If, however, there are not one but two commanders, then the danger emerges that they may not themselves agree on which plan should be adopted. The coordination problem is thus moved up a level rather than being resolved.

Certainly there are many examples of these kinds of situations in the military history of Iraq under Saddam Hussein. Ba’ath Party Commissars, with little or no military training, had dual
control over Iraqi military units with professional military officers. Both Pollack and al-Marashi and Salama recount numerous instances of Iraqi officers wasting hours of critical time reacting to the Americans and the Iranians while waiting for their military and political superiors to agree a response. By the time decisions had been made, the situation had changed and a fresh decision was required (al Marashi and Salama 2008; Pollack 2002).

However, the dual command system cannot take the lion’s share of the blame for Iraq’s low destructivity. Of all coup proofing mechanisms, dual command is one of the first to be jettisoned when it seriously hampers the Executive’s ability to defend his regime from external threats. This is partly because its damaging effects on the Army are quite clear and partly also because its abolition requires a very simple order from the center and takes effect automatically. In Stalin’s case, dual command was abolished by decree as the Wehrmacht’s panzers neared Moscow and replaced by a system known as ‘edinonachlie’. By this system, military officers had sole command responsibility with commissars relegated to a purely monitoring role (Reese 2005).

Similarly, as the tide of the Iran-Iraq War turned against the Iraqis with Iranian forces invading Iraqi territory, the Ba’ath Party convened an emergency conference in 1986 to discuss the situation. The military leadership (all of whom were Party members, more of which later) prevailed upon Saddam to abolish dual command and institute an Iraqi version of ‘edinonachlie’. As with Stalin’s men 45 years earlier, the Ba’ath Party’s political commissars were relegated to an observational role and full authority over military decisions was vested in military officers (al Marashi and Salama 2008).

This decision formed part of a package of policies designed to reverse the tide of the war against Iran. Isolating the individual effect of abolishing dual command is tricky, but the package
of measures undertaken after 1986, taken as a whole, did improve Iraqi military performance against the Iranians (Pollack 2002). What they did not do, however, was to even come close to closing the qualitative gap with the West.

In fact, all of the reforms undertaken in 1986, including the abolition of dual command, were still in place when the Iraqi Army was crushed by the Coalition in Desert Storm (Pollack 2002). Consequently, although dual command clearly did not help Iraqi destructivity – especially in the early years of the Iran-Iraq War or in the US-led invasion of 2003 – it was certainly not the key or main difference separating Iraq from the United States.

A similar argument can be made about the second major coup proofing mechanism – officer rotation and purging.

Again, in practicing officer rotation, Saddam was following the example of Stalin. Stalin frequently rotated officers from unit to unit to ensure that they did not form long-lasting trusting relationships with their peers and subordinates on which to base a coup. At the same time, however, these long term relationships might also be thought crucial for destructivity. After all, why would a Junior Officer take personal risks in fighting hard to gain credit with his superior, if this superior is likely to be posted off to yet another unit within a few months? Would one officer trust the other to help him in a dangerous situation if he had only recently transferred from some other unit, and was likely to be transferred again soon?

While this mechanism might appear at first blush to be a compelling explanation for Iraq’s low levels of destructivity, closer examination reveals certain flaws.
First, as the theory chapter points out, the number of ranks of the Army which can seriously threaten a coup is limited by the Army’s overall size. Iraq’s Army already numbered 200,000 men at the beginning of Saddam’s reign and expanded to 800,000 by the end of the Iran-Iraq war. Early in Saddam’s reign, therefore, ranks as low as Lieutenant Colonel (muqaddam in Arabic (al Marashi and Salama 2008)) might have realistically threatened a coup. By the late 1980s, by contrast, only Brigadiers (‘amid), if not Major Generals (liwa), would have had sufficient connections to undertake such a risky form of collective action.

Quantitative evidence on the probability of rotation by rank in the Iraqi Army will probably always be lacking – and it would, of course, be hard to say when a particular officer transfer was motivated by coup proofing rather than routine operational concerns. Nonetheless, descriptions and accounts of officer rotation by Iraq experts do indeed suggest that the practice extended almost exclusively to these higher ranks. For instance, of a list of officers purged, arrested or executed by Saddam Hussein provided by al-Marashi and Salama, none held a rank below that of General (fariq awwal) (al Marashi and Salama 2008). Similarly, in 1982, in one of Saddam’s largest mass purges, 300 officers were purged, all of whom were Generals (al Marashi and Salama 2008). Again, following Desert Storm, Saddam purged a reported further 1,500 officers. Their ranks were not reported, but all were described as ‘senior’, including his Chief of Staff Major General Hussein Rashid25.

This, then, is the first major problem with officer rotation as an explanation for Iraq’s low level of destructivity. The very lowest level horizontal relationship which officer rotation would have damaged would be that between Lieutenant-Colonels and their peers. The lowest vertical

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25 ‘Hussein Reportedly Purges 1,500 Officers’, Los Angeles Times, June 30th 1991
relationship would be that between these Colonels and the Majors beneath them. However, most analysts agree that the Iraqi Army’s principal problems lay at a lower level in the military hierarchy – the tactical units led by Lieutenants or even Non-Commissioned Officers. Kenneth Pollack, for instance, notes:

“Without doubt, however, Iraq’s greatest liability remained the limited capabilities of its tactical formations (my italics). Setting aside the superior performance of Western equipment over Iraq’s largely Soviet arsenal, Iraqi units simply could not fight at the same levels of effectiveness as the British, French and especially American soldiers and officers who made up the core of the coalition’s military forces. Iraqi tactical commanders were inflexible and incapable of responding to the constant maneuvering, deception and speed of their adversary. Time and again, the response of Iraqi units to being surprised or outflanked was either to do nothing, to keep doing what they were already doing, or to flee” (Pollack 2002)

Moreover, as with dual command, officer rotation was ended by Saddam after the Ba’ath Party special conference of 1986 (al Marashi and Salama 2008). From then on, senior officers were allowed to stay on at their commands to build up trust unless good operational reasons existed for their transfer. Officer rotation was not reinstated again until after Desert Storm. Consequently, the Iraqi Army suffered the ‘Mother of All Defeats’ in 1991 in spite of the fact that officer rotation had been curtailed as a policy five years earlier. This time would surely have been sufficient for both vertical and horizontal trust to develop between Iraqi officers. The fact that the Iraqi Army still went down to an annihilating defeat suggests officer rotation, like dual command, may have some effect on destructivity but cannot explain the qualitative gulf which separated Iraq from the Coalition.

To explain this gulf, we must therefore look to other factors.

4.5 Ethnic Fragmentation
For some analysts, at least part of the key to Iraq’s low levels of fighting effectiveness lies in its ethnic fragmentation. Timothy D Hoyt makes this case most explicitly in his chapter “Social Structure, Ethnicity and Military Effectiveness: The Case of Iraq 1980-2003” in the volume “Creating Military Power”, although Hoyt is by no means the only observer to have made this claim. Anthony Cordesman’s study of the 2003 Iraq War, for instance, also hints at the difficulties which ethnic divisions caused Saddam in creating effective military forces (Cordesmann 2003).

The religious/ethnic divisions amongst the Iraqi population are very familiar to most observers. According to CIA World Factbook estimates prior to 2003, the majority Shi’a Arab community comprised 60-67% of the population, ahead of the Sunni minority at 32-37% (including Sunni Kurds) with the remaining 3% of the population mostly comprising various Christian denominations. Ethnically, Arabs constituted 75-80% of all Iraqis, with 15-20% Kurds and the remaining 5% Turcomen and other small groups such as the Assyrians (Cordesmann 2003).

In light of this, however, it is pertinent to note that Iraq’s degree of ethnic fragmentation is not especially high by global standards. By the standard measures which most development economists and political scientists use for ethnic fragmentation, Iraq places very close to the global average and in some cases even below it.

According to the measures developed by Alesina et al, Iraq scores .36891 on ethnic fractionalization versus a global average of .4413347, .3694473 on linguistic fractionalization versus a global average of .3936612 and .4843678 on religious fractionalization versus a global average of .438756. On two out of three of Alesina et al’s fractionalization measures, therefore,
Iraq scores below the global mean on ethnic diversity (Alesina, Devleeschauwer, Wacziarg, Kurlat & Easterly 2002). The same is also true of Roeder’s cross-temporal measures. Here Iraq scores .363 in 1961 against a worldwide mean of .4503467 and .375 in 1985 versus a world average of .4546313 (Roeder 2001). Only James Fearon’s measures of ethnic and cultural diversity both place Iraq above the global mean - .548961 on ethnic diversity (with a global mean of .4781103) and .355211 on cultural diversity (with a global mean of .3103275). However, even here, Iraq’s score is well within one standard deviation of the global mean (Fearon 2003).

Of course, this in itself is no more than suggestive – it could be that more fragmented states than Iraq avoid fighting inter-state wars altogether, so that Iraq’s fragmentation level would be unusually high for the sample of war-fighting states. This, however, is not the case – the sample of war fighters in my macro-comparative dataset shows a mean ethnic fractionalization score of approximately .41 for attackers and .317 for defenders – significantly higher than Iraq’s score for the former and marginally lower for the latter.

It is also true that Iraq’s religious fragmentation is higher than its ethnic fragmentation – the latter only taking into account the differences among Arabs, Kurds and Turcomen rather than between Sunni and Shi’ite. It is however instructive that the compilers of the Atlas Narodov Mira did not consider the latter difference to be salient. As Joseph Sassoon points out, Iraqis themselves would not have differentiated between Sunni and Shi’a when the Atlas was first compiled. Nonetheless, even indices of religious fragmentation place Iraq below many of its adversaries such as the United States and Great Britain. Alesina et al place Iraq’s religious fragmentation at approximately .48, fractionally above the global mean, but almost half the United States’ score at .82 and lower even than Britain’s at .69 (Alesina, Devleeschauwer,
Wacziarg, Kurlat and Easterly 2002). If one is to claim that the Catholic-Protestant division in Western countries is not a ‘real’ religious division as the Sunni-Shi’a division is in the Middle East then one has fallen back into the tautological trap – countries are only coded as ‘genuinely’ fragmented when you actually observe the outcome fragmentation is supposed to produce.

With these caveats in mind, let us examine the specifics of Hoyt’s claims about the influence of ethnic division on Iraq’s destructivity. Hoyt outlines five mechanisms through which ethnic fractionalization might damage a state’s fighting effectiveness. The first is by undermining morale and cohesion at the small unit level (a similar claim to that made by Costa and Kahn with respect to the Union Army in the American Civil War). The second is by making it harder for the state leadership to mobilize its entire population in a prolonged war. The third is through encouraging the promotion of incompetent ethnic kinsmen to high command. The fourth is by lowering the amount of training given to the troops, especially those from non-dominant ethnic groups. Finally, the fifth is by encouraging cumbersome and confusing chains of command (Hoyt 2009).

Examining the Iraqi case, Hoyt in fact finds little or inconclusive evidence for the first two mechanisms. He notes that Iraqi small units, including the minority Shi’a, fought bravely and with determination against the Iranians but deserted or surrendered frequently when faced with the United States and its allies (Hoyt 2009). This view is supported by Kenneth Pollack, who points out that Iraq’s Shi’a minority soldiers proved resistant to appeals to surrender or desert from their Iranian coreligionists and fought with admirable commitment (Pollack 2002). The greater reluctance of Iraqi troops to fight with such determination in Desert Storm seems
therefore to be more a result of inadequate leadership, logistics and cover against Allied air
attacks than ethnic division (Pollack 2002; Hoyt 2009; Biddle 2004).

Hoyt also judges that there is little evidence in favor of his second mechanism – that
ethnic divisions made it difficult for Iraq to mobilize a mass army. By contrast, Iraq managed to
put a total military force of close to 1 million men in the field – an impressive achievement for a
relatively small country (Hoyt 2009).

It is in the areas of skills training, promotion and command and control structures that
Hoyt sees the strongest evidence for an effect of ethnic fractionalization on Iraqi military
effectiveness. Hoyt notes that Saddam discriminated against Shi’a in both hiring and promoting
officers and that the Iraqi Army exhibited low levels of training and skill, which he attributes to
Iraqi ethnic divisions (Hoyt 2009). Like Pollack and al-Marashi and Salama, he also points to the
cumbersome dual command systems which Saddam instituted and to the effects which this had on
the Iraqi Army’s speed and responsiveness (Hoyt 2009).

Hoyt unquestionably has a point in critiquing the Iraqi Army’s levels of training. He is
also correct in pointing out the connection between this factor and the Iraqi Army’s promotion
policies. Moreover, this lack of training, as we have seen with respect to the British and German
cases, unquestionably does lead to an inability to respond effectively to unforeseen situations.

Where Hoyt falls down, however, is in connecting this specifically to Iraq’s ethnic
divisions. Selection into and promotion in the Iraqi officer corps will be discussed below, but for
here it suffices to say that Saddam’s policy could better be described as one of discrimination
against anyone who might pose a threat to his personal rule rather against Shi’a per se. There is
no question that the Shi’a were underrepresented in the Iraqi Army officer corps. The former head
of Israeli military intelligence’s Iraq desk Pesach Malovany estimates that a mere 25-27% of Iraqi Generals came from the majority Shi’a population (Malovany 2011, 752). This, however, more plausibly represents Saddam’s belief that his Sunni co-religionists were somewhat less likely to seek to overthrow him than it does direct discrimination.

In fact, as his regime became more and more insecure, Saddam also appears to have discriminated against most Sunnis as well as Shi’a in promoting military officers. Iraq’s military leadership came to be disproportionately drawn from Saddam’s kinsmen from the town of Tikrit and members of his tribe, the al-Bu Nassir 26. Malovany also believes that one half of all Iraqi Generals and one third of all Iraqi officers in the 1980s came from just two towns – Tikrit itself and Mosul (Malovany 2011, 753). This represents not so much sectarian discrimination against the Shi’a so much as the operation of a very tightly-knit kinship network at the apex of the Iraqi military. It was thought that those with an actual or notional familial tie to Saddam would be the least likely to attempt to topple him. Yet, as his grip on power appeared ever more insecure in the late 1990s, even these ‘kinsmen’ were implicated in plots to overthrow him, and the pool of individuals from which Saddam was happy to appoint senior leaders shrank even further (al Marashi and Salama 2008). In fact, almost all of the coup attempts listed by al-Marashi and Salama were in fact mounted by other Sunnis. Indeed, Saddam was careful even to play his sons Uday and Qusay off against each another, in case one of them should be tempted to mount a coup. This suggests that even a 100% Sunni Iraq would have been no less coup vulnerable than Iraq actually was.

26 Quinlivan calculates that the Al-Bu Nasir Tribe constituted only 1/200 of Iraq’s overall Sunni population. Quinlivan 1999
This suggests that it was the insecurity of Saddam’s rule, rather than ethnic division per se, which drove the Iraqi Army’s dysfunctional promotions policy.

Conversely, those non-Sunni Arab Iraqis whom Saddam did personally trust were allowed to rise to senior ranks within the Iraqi Army. Many Senior Commanders who rose to prominence in the Iran-Iraq War were Shi’a or Kurdish. For instance, the Iraqi Army’s Deputy Chief of Staff for Operations in the later years of the war with Iran was General Husayn Rashid Wandawi Al-Takriti, a Kurd (al Marashi and Salama 2008). Prominent Shi’a commanders listed by al-Marashi and Salama include Lt General Abd Al-Sattar Ahmad Al-Muini who commanded the 2nd Army until January 1987, Lt General Saadi Tuma Abbas Al-Jaburi who commanded the First, Third and Seventh Armies, Major General Nimat Faris Hussein Al-Mihyawi who led the First Army and served as the President of the Al-Bakr University for Higher Military Studies and Hamid Ahmad Al-Ward who served as the commander of the Anti-Aircraft Defense Forces (al Marashi and Salama 2008). This in fact reflects a growing understanding of the Ba’th Party’s rule in Iraq was not simply about Sunni oppression of the Shi’a (Sassoon 2011). In fact, the Ba’th regime was happy to rise up to prominence in the civil or military state apparatus anyone who accepted Saddam’s rule. As Joseph Sassoon pointed out:

“The Ba’th regime defined Iraqis not by their religion but by their support and loyalty to the party” (Sassoon 2011)

“When the issue of sectarianism came to the fore after the 1991 uprising, he (Saddam) told his inner cabinet, which included members of the RCC and the party’s Regional Command, that he was completely oblivious to the differences between Sunnis and Shi’a, and that the first time that he encountered this issue was when he was in exile in Cairo and someone asked him if he was Sunni or Shi’a. He mused on the fact that no one from Tikrit would know the difference.” (Sassoon 2011)
“Among the higher echelons of the party, the army and security organizations, there were some Shi’is serving the regime until 2003, and as we have seen, Saddam Hussein placed emphasis on loyalty rather than religious affiliation….Saddam Hussein’s persecution of the Shi’is stemmed from his incorrect belief that many would be influenced by the ideology of his real bête noire, the Ayatollah Khomeini, and hence would pose a threat to his regime.” (Sassoon 2011)

As suggested above, in fact, attributing Iraq’s military ineffectiveness to ethnic division risks making the same mistake against which James Fearon warned students of comparative politics and development economics:

“If there are, in fact, multiple ways of listing a country’s ‘ethnic groups’ then we must be careful not to, in effect, choose the coding that best supports our theory after the fact. Soviet ethnographers of the 1960s viewed Somalia as highly homogenous, a nation of ethnic Somalis sharing religion, language and customs. That was a perfectly plausible coding and remains so today. Since the civil war of the 1990s, however, analysts seeking to explain poor prior economic growth or the civil war itself would be drawn to argue that Somalia is highly ethnically fragmented along clan lines, and thus a good example of the proposition that ethnic heterogeneity causes poor economic performance and civil strife” (Fearon 2005)

In the case of Iraq, analysts have noticed that the Army was highly and consistently ineffective and then looked at the ethnic divisions which might have caused it. What they have neglected to notice is that Iraq’s poor military performance was against states which, by standard measures, were in fact even more ethnically diverse than Iraq itself. For instance, Roeder’s ethnic fractionalization measure gives the United States a score of .575 in 1985, significantly higher than Iraq. Similarly, Iran, with its Arab, Kurdish, Azeri and other minorities, scores .75, precisely double Iraq’s score. Even the United Kingdom scores marginally higher on ethno-linguistic fragmentation than Iraq (Roeder 2001). Quite how ethnic fragmentation could have caused Iraq’s poor performance against other even more diverse states is not quite clear.
The first response to this is of course to question the validity of the measures – yet Fearon’s and Alesina et al’s ethnic fractionalization measures give broadly similar results. Fearon codes the United States as slightly and the UK as significantly less fractionalized than Iraq, but otherwise both measures draw similar conclusions to Roeder (Fearon 2003). Recoding ethnic groups in Iraq’s adversaries to make them appear less heterogeneous than Iraq would simply be an exercise in post-hoc ‘data-mining’ of the sort cautioned against by Fearon.

Supporters of the view that ethnicity was a key determinant of Iraq’s low destructivity might say that there is some other factor about Iraq’s opponents which counteracted the influence of ethnicity. For instance, some might claim that the United States’ ethnic fragmentation score does not take into account America’s unique ‘melting pot’ ideology and socialization process. This however would represent an arbitrary domain restriction – that is, claiming that ethnicity matters for military effectiveness, apart from sometimes, when it doesn’t. If we recode ethnic fractionalization as low in very diverse countries which have found some way to overcome ethnic divisions, then we are again engaging in a circular, post-hoc exercise in shifting the goal posts.

In fact, other evidence from the Iraqi case suggests that Saddam found numerous ways to overcome the major ethnic divisions in Iraq society without damaging military effectiveness. It has often been pointed out that the lower ranks of the Regular Army consisted mostly of Shi’a while the parallel Armies – the Popular Army, the Republican Guard and the Special Republican Guard – were predominantly Sunni (Pollack 2002). On one level, this in fact represents a neat solution to the problem of eliciting cooperation amongst differing ethnic groups within small units.
Suppose, for instance, that a Sunni *jundi* (private) doubts that a Shi’a *jundi* will ‘have his back’ in combat. In an ethnically mixed platoon, this might be a serious problem. If, however, platoons are ethnically homogeneous, and only mid to high level formations (such as divisions or corps) are mixed, then most of the time small unit cohesion will not be problematic even if the Army as a whole is ethnically diverse.

Moreover, evidence suggests that Saddam’s regime made many strategic concessions to the Shi’a to ensure their continued loyalty, especially in the war with Iran. For one, Saddam ramped up spending on public works projects in Shi’a areas during the war. He also made more symbolic concessions such as honoring Shi’a religious festivals as public holidays (al Marashi and Salama 2008) and even having his son and originally designated successor Uday Saddam Hussein convert to Shi’ism27. At the same time, Saddam also stressed a common theme of Iraqi and Arab nationalism when fighting against the Iranians, who were described by Iraqi propaganda not as Shi’a but after the pre-Islamic religion of Persia as ‘Magii’ (Sassoon 2011). Similarly, anti-American propaganda about ‘Zionist crusaders’ served a similar purpose in reminding Sunni and Shi’a of the characteristics which united them and divided them from Saddam’s enemies (Sassoon 2011). A common Islamic identity, in fact, outlived Saddam’s fall and even extended to cooperation between Sunni and Shi’a insurgents against the United States after 200328.

This is not, of course, to suggest that Sunni-Shi’a relations were good under Saddam or to deny his brutal repression of the 1991 Shi’a uprising. It is simply a reminder that Saddam did show an ability to win the Shi’a onto his side when necessary and that, partly as a consequence,

the Iraqi Army’s poor fighting performance is hard to trace back to sectarian division. Saddam did, as we shall see below, engage in some very damaging personnel policies in the Iraqi officer corps, but this reflected the vulnerability of his own personal rule, not that of the Sunni minority as a whole. As the rapidly narrowing base of Iraq’s officer corps in his final years showed, such policies would most likely have been pursued in an Iraq which was perfectly ethnically homogeneous.

4.6 Motivation

Unquestionably, if harsh negative sanctions were the only factor fostering destructivity, then Iraq’s military should have been one of the most effective on the planet. Like the armies of World War One, Iraq maintained the death penalty for desertion and applied it liberally. However, Saddam went far beyond Haig or Ludendorff in terms of the range of offenses for which an Iraqi soldier could be executed. In addition to ‘internal’ and ‘external’ desertion, Iraqi soldiers could be executed for insubordination, membership of a banned political party such as the Shi’ite Dawa Party (Sassoon 2011) and for insulting Saddam Hussein (Sassoon 2011). In this sense, then, the Iraqi Army’s disciplinary regime more closely resembled those of Stalin’s Red Army or the post-Stalingrad German military.

Yet Saddam went even further than Hitler in some extensions of the death penalty. As we have seen, the Wehrmacht’s capital cases mostly involved low level soldiers executed for clear if

29 I am using these terms as a translation of the French penal code’s distinction between ‘désertion à l’intérieur’ and ‘désertion à l’ennemi’. The former refers to deserting behind one’s own lines, the latter to surrendering to the enemy without offering satisfactory resistance. In the case of the latter type of desertion, sentence could and often would be carried out on the offender upon his repatriation from the enemy’s PoW camps. Sassoon, op cit, p206
sometimes absurdly minor breaches of military law – from being caught actively cooperating with Yugoslav partisans to stealing socks from a postal sorting depot (Messerschmidt 2007). What Hitler did not do was to use the death penalty as a way to raise the German Army’s performance by punishing perceived incompetence, especially in mid-ranking or senior officers. Hitler did execute Generals he had suspected of participation in the July bomb plot. He also condemned to death for external desertion in absentia garrison commanders who he believed had surrendered too readily (Beevor 1998). Operational failure or disobedience at the highest levels, however, resulted at worst in reassignment or early retirement. The latter was the fate, for instance, of Heinz Guderian after he was accused of causing the failure of the German drive on Moscow by defying a ‘stand fast’ order from the Fuehrer (Evans 2009). As we have seen in the German case, there is evidence that Hitler was aware of the problems which might arise if an Army were to punish capable officers for differences of opinion or for failure through bad luck rather than shirking. Such a policy would ultimately have been incompatible with ‘Auftragstaktik’.

Saddam, by contrast, grew frustrated with the performance of the Iraqi Army and began to use the death penalty as a punishment even for Senior Commanders who had failed to perform according to his expectations. His mass execution of Generals in 1982, for instance, was driven by their failure on the battlefield rather than political disloyalty (Woods et al 2011). Rather than trust the operational judgment of Air Force officers, moreover, Saddam took to executing pilots who returned from bombing missions with their bombs or missiles still attached to their planes31. Whereas the principles of ‘Auftragstaktik’ clearly give the subordinate leader the latitude to

disobey an order if it conflicts with his understanding of the local situation, the Iraqi Army under Saddam Hussein allowed no such right and in fact maintained the death penalty for ‘insubordination’\textsuperscript{32}. As my theory chapter predicts, the consequences of this policy were not to increase the Iraqi Army’s skill or motivation levels, but rather to encourage Iraqi troops at all levels to stick rigidly to orders and never display the kind of ‘creative disobedience’ of the ‘Auftragstaktik’ philosophy.

The reasoning of an Iraqi leader – at whatever level- when faced with a situation in which he spots a superior opportunity which may involve deviating from orders can easily be imagined. If he uses his initiative successfully, then he may be promoted and rewarded at least for a while. However, the rewards for successful soldiers were far less long term and credible than in more stable countries. For instance, analysts have often pointed to General Mahir Abd al-Rashid as one of Iraq’s most able generals. Following 1986, when the gravity of the external threat from Iran had caused Saddam to loosen political control over the officer corps, General Rashid was given a large degree of leeway to make his own decisions. He even escaped punishment for contradicting Saddam’s account of a particular battle with the Iranians. To cement his loyalty to the regime, he was married to Saddam’s own daughter. Nonetheless, after the war was over and the Iranian threat had receded, Rashid was placed under house arrest and his brother executed by Saddam (al Marashi and Salama 2008).

The reward for success was therefore short term and uncertain. The punishment for failure, by contrast, was more reliable.

\textsuperscript{32} Conflict Records Resource Center: Saddam Hussein Collection: Document CRRC SH-GMID-D-000-423, ‘Executions for Insubordination’
Consequently, an Iraqi soldier, knowing the rewards for success highly contingent on Saddam’s future goodwill and the punishment for failure severe, will choose to play it safe by sticking to the script even if this results in an inferior outcome for the Army as a whole. Iraqi officers interviewed by Woods are quite candid about this:

HAMDANI: “There was a field courts martial in Basra in July 1982. It was not publicized. The minister of defense, his deputy, Izzat Ibrahim al-Duri, the political deputy for Saddam Hussein, party leaders and several members of the high command of the armed forces were there. It was like Field Marshall Wilhelm Keitel with Hitler. Most of those in the high command were Saddam’s lackeys. It was not a regular trial; it was tense with a lot of screaming, yelling and hurling of insults. The defeat represented a great political shock. Since Khorramshahr had fallen, it meant that Basra could fall as well. The executions were a nervous reaction to what had happened. That is why these commanders were considered martyrs after time passed. The trial and executions did not help at the time, of course; the process repeated itself every time there was a failure, in spite of whatever success a commander might have achieved before. Nothing could save a commander from execution once he had failed.

This was a serious issue and it had a great impact on the Army. From this point on, commanders chose to avoid responsibility. For example, sending out reconnaissance patrols is a commander’s responsibility. Only a commander could send out a patrol at the battalion level. Because of this fear of responsibility, corps commanders would wait for approval before sending units on reconnaissance missions. This killed the creative spirit within the army’s structure. I confronted this problem in my own unit when I was a commander. I wanted to assume responsibility. I discussed this issue twice with Saddam, several times with Qusay Hussein, and with the Minister of Defense and the Army Chief of Staff. I argued that it was important to provide a commander with a margin of error in case mistakes should happen. This particularly

33 In light of my preceding discussion, it should be pointed out that the German analogy refers to the fact that Field Marshall Keitel was considered to be a weak-willed Hitler sycophant and not to any similar mass courts martial and execution of failed German Generals.
affected us in the last war of 2003. Commanders would wait for an order from higher up before executing any decision” (Woods et al 2011)

Thus the lack of initiative in the Iraqi Army’s ranks represented a rational response to a disciplinary system which attempted to make good on a skill deficiency through harsh negative sanctions. The question now arises as to the origins of this deficiency. It is this question which will occupy the next section.

4.7 Conclusion

Iraq’s low levels of destructivity under Saddam have been extensively analyzed. Many of the theories which have been induced to account for this phenomenon have been shown to be overblown. Many previous coup proofing theories, for instance, have been shown on closer inspection to be problematic. Dual command, for instance, was undoubtedly a problem for Iraqi commanders in the early years of the Iran-Iraq War and again in 2003. However, precisely because dual command is such a cumbersome system, it was abolished by Saddam later in the 1980s in favor of an Iraqi version of edinonachlie and only reinstated after Desert Storm. It cannot, therefore, account for the problems the Iraqi Army faced in 1991. Similarly, parallel military organizations as such are not a good explanation for Iraq’s problems. If the supposedly elite troops of the Republican Guard, concentrated together against the US Marines, fared only a little better than the Regular Iraqi Army, then it is hard to see why Iraq would have been able to stand against the Coalition had it had only one Army. The Republican Guard and the Regular Army each contained their own armor, artillery and infantry, so that the concerns expressed by Pilster and Boehmelt about the difficulties of cross-branch training have little application. In fact,
as well as having cross-branch training within their ranks, Republican Guard and Regular Army units in fact trained alongside one another in the late 1980s.

As for ethnic fragmentation, there is little evidence to support the contention that this factor played a major role. Much media commentary has in fact overplayed the severity of divisions between Sunni, Shi’a and Kurd in Saddam’s Iraq. Although discrimination against Shi’ites and Kurds undoubtedly existed in the Iraqi officer corps, many senior Iraqi officers were nonetheless of Shi’ite or Kurdish origin. In fact, it is difficult to distinguish anti-Shi’a or anti-Kurdish discrimination from coup proofing on Saddam’s part – Saddam also ‘discriminated’ against Sunni Iraqis outside of the Tikriti tribes with which he had notional kinship ties. At the same time, of course, he was happy to promote those Shi’ites or Kurds who he did not believe constituted a threat to him.

Shi’ites and, to a lesser extent, Kurds in turn were quite willing to fight hard in the Iraqi Army even against the Iranians. Moreover, as pointed out above, all of Iraq’s battles under Saddam were against states which were even more ethnically fragmented by standard measures. If divisions between Sunnis, Shi’a and Kurds were so crucial to hampering Iraqi fighting performance, why did similar problems not arise between Persians, Azeris and Arabs in the Iranian Army, or for that matter between African-Americans, Whites and Hispanics in the US Army?

The ‘funnel’ argument receives some support in the Iraqi case. Saddam was exceptionally careful to restrict access to the officer corps to those who were considered politically reliable. Only members of the Ba’athist ‘club’, who had sunk costs into Saddam’s rule, could even enter the system by the end of the 1980s. Rigorous investigations into the political loyalties of officer
candidates ensured that those whose families were even suspected of anti-regime activity would be excluded. Evidence of the effects of this on the incentives of Iraqi officers to acquire military specific skills is mixed. Sources such as Hamdani and Sassoon suggest that those considered political favorites were far from seriously motivated to learn how to be soldiers. Other sources suggest that, in the military academy and staff colleges at least, given that everyone was a political loyalist, all had some incentive to study hard for personal advancement. Of course, this latter point must be qualified. Obviously had Iraq’s officer corps been open to all incomers regardless of prior political affinities, not only would Iraq have been able to benefit from a far larger pool of talented officers, but also the prospect of competition from these officers would have driven up standards for all entrants into the military education system. Suppose, for instance, the United States were to ban the importation of any foreign cars. General Motors would still have incentives to produce reasonably good and well-priced cars to compete with Chrysler and Ford. The quality and price of American cars would, however, surely be lower than in the case where GM also had to compete with the likes of BMW, Honda and Hyundai too.

That said, the quality of the Iraqi officer corps, especially pre-Saddam professionals such as Hamdani and Makki, was higher than Iraq has often been given credit for. The performance of many of Iraq’s well educated, often foreign trained and professional senior officers has been rated highly by analysts from Kenneth Pollack (Pollack 2002) to Kevin Woods.\textsuperscript{34}

The biggest problem for Iraq in fact lay at a lower level. As has been stressed elsewhere, NCOs are recognized as the backbone of an Army and it is here that Iraq’s biggest weakness lay. NCOs in the Iraqi Army had very little in the way of military education. This in turn was due to

\textsuperscript{34} Interview of Kevin Woods by the author
the fact that literate Iraqis from lower socio-economic strata—the wellspring of the NCO corps in other Armies—were relatively rare and so were needed far more outside. The Army was left as a ‘residual claimant’ on poorer Iraqis and from this timber it was not felt that an extensive NCO education such as that pioneered in the Kaiser’s German Army was feasible. Without a skilled NCO corps, Iraqi commanders were compelled first to try to use junior officers as de facto NCOs. Not only did this lead to very high officer casualties, but it became clear that there were simply not enough junior officers to perform this role. Consequently Iraqi commanders had to forego the kind of independent, small unit tactics characteristic of the modern system—not because of a hierarchical Arab culture but rather because they did not have enough skilled lower level leaders to take charge of tactical formations below platoon level.

Thus the strongest and most consistent finding from this case again points to basic literacy as the key taproot of destructivity. An education system which, like Iraq’s, historically gave preference to tertiary education for the children of the wealthy elite over basic education for the masses, is sufficient to create a competent officer corps but will fall down at the NCO level. If the current Iraqi Government under Nouri al-Maliki is to create an effective Army, it will have to give priority both to basic literacy and to the pay and post-service care sufficient to recruit and retain good NCOs against competition from a revived Iraqi civilian economy. The current steps taken with US help towards building Iraqi NCO academies are very encouraging in this regard—at least, of course, if Iraq in future has governments committed to democratic rule and at peace with its neighbors. Building a good Iraqi NCO corps which proves a weapon in the hands of a new Saddam would be to create a Frankenstein’s monster, a Middle Eastern Wehrmacht in embryo.
A final point warrants more extensive discussion, given the light that it may shed on the issue of selection bias in battle-level data. After the information revealed by the Iran-Iraq War and then Desert Storm about the weaknesses of the Iraqi Army, why did Saddam ever try to go toe to toe in a conventional war with the United States and its allies at all? Would not a rational actor model expect that Saddam would either cut a deal short of war or alternatively fight the kind of war that Iraq would be more likely to win, that is, an insurgency?

In 1991, for instance, Saddam could have accepted a deal, perhaps through Soviet mediation, which would have allowed for him to withdraw from Kuwait when it became clear that the United States was resolved to launch military action. At the same time, however, it should also be borne in mind that the outcome of Desert Storm was far less predictable than it now appears with hindsight. Many serious analysts in the West also believed that the Iraqi Army might have been able, if not to defeat the Coalition, then at least to inflict sufficient losses upon it that President Bush Sr would be compelled by US public opinion to concede Kuwait to Saddam. Captured recordings of discussions with his inner circle reveal that Saddam himself believed that if the Iraqi Army were even able to kill one American for every four Iraqis, then the United States would give in (Woods et al 2007).

In 2003, the outcome of the pending military struggle was surely more easily foreseeable but it is less clear what kind of potential bargain would have been acceptable to both sides. It has been reported that Saddam was attracted by a deal whereby he would renounce the leadership of

35 The US Defense Department’s own statistical models had predicted far higher casualties for Desert Storm than turned out, in fact, to be the case. Even the closest expert analysis predicted double the amount of Coalition Casualties. Biddle, Military Power, p1; The Gulf Conflict, 1990-1991: Diplomacy and War in a New World Order, Lawrence Freedman and Efraim Karsh, p391. Based on a similar estimate, Saddam believed US public opinion would turn against the war before Bush had achieved his operation objectives. Choosing your Battles: American Civil-Military Relations and the Use of Force, Peter Feaver and Chris Gelpi, p4
Iraq and go into exile in the United Arab Emirates. The deal is understood to have fallen through
over the issue of credible commitment – Saddam wanted the Arab League to officially underwrite
his amnesty should he accept the deal, something which the League were unable to agree amongst
themselves to do\textsuperscript{36}.

The most puzzling of Saddam’s decisions, therefore, is not why he tried to stand and
fight in 1991, or why he did not cut a deal in 2003, but rather why he tried to resist Operation
Iraqi Freedom through conventional means. Saddam’s forces could have melted away in front of
the American invasion and moved straight to an insurgency campaign. Given the insurgency
which did follow the invasion, many analysts initially believed that this is what Saddam had in
fact done\textsuperscript{37}. However, documents captured by the US Army after the war prove conclusively that
Saddam did not plan to face the US-led invasion with an unconventional, insurgent response
(Lacey et al 2006). General Hamdani was, in fact, removed from a pre-war conference by
Saddam precisely for suggesting this course of action (Woods et al 2007). The insurgency arose
after the invasion, rather than being pre-planned by Saddam’s regime (at least in the majority of
Iraq, as we shall see below).

There are two potential explanations for this decision, one from the rational choice
paradigm and another from the cognitive bias literature.

\textsuperscript{36} http://www.nytimes.com/2005/11/02/world/africa/02iht-saddam.html?_r=1
\textsuperscript{37} Thom Shanker, “Hussein’s Agents Behind Attacks, Pentagon Finds,” \textit{New York Times}, 29 April 2004,
For a report that suggests Saddam Hussein was the catalyst behind the postwar insurgency, see Joe Klein,
The rational choice explanation, based on Brennan and Tullock, would point out that an insurgency campaign would exacerbate even further Saddam’s already severe principal agent problems with his commanders and troops alike. As Brennan and Tullock note:

“Guerilla operations clearly greatly increase monitoring costs. Scope for shirking on the part of entire units, of lying low unobserved by individual soldiers and leaving everything to the ‘intrepid few’ is much greater than in conventional warfare.” (Brennan and Tullock 1982)

In addition, one might point out that a coup vulnerable leader such as Saddam, if he does go underground, no longer benefits from the collective action problem his opponents have in mounting a coup against him. Instead of his senior generals having to act in concert to execute a coup, all it takes is for one individual, who internalizes all the reward, to provide accurate and timely intelligence of his whereabouts to the Americans in order for Saddam to be eliminated from the scene permanently. This, of course, is ultimately what happened. These issues provide quite compelling reasons why Saddam might have rationally concluded that a conventional fight was the best of a number of bad options.

The contrary perspective is that Saddam was limited by his own motivated biases, reinforced by his tendency to surround himself with an inner circle of sycophants. According to this view, Saddam misjudged the gap in destructivity between the American and Iraqi Armies due to an officially sanctioned and misleading Iraqi history of Desert Storm, misjudged the resolve of the Bush administration to depose him and misjudged the ability of the United Nations to prevent his regime from being overthrown. This view is doubly opposed to the rational choice paradigm – first in the contention that Saddam systematically misperceived several key variables in his decision making calculation and second in the view that he did not perceive the need to appoint individuals to his inner circle who could correct rather than amplify these misperceptions.
Analysts such as Kevin Woods point to captured records of Saddam’s speeches to senior political and military leaders as evidence in favor of the latter theory. For instance, these speeches frequently refer to Desert Storm or ‘the Mother of all Battles’ as an Iraqi victory, a clearly delusional statement if taken literally. Woods also points out that Saddam did not accept any reports from his military or intelligence community contradicting this officially sanctioned viewpoint, a tendency which further clouded his decision making process in the run-up to the 2003 invasion (Lacey et al 2006).

Nonetheless, Saddam’s speeches, even to relatively high level colleagues, may need to be taken with a pinch of salt. For one thing, given the vulnerability of his position, Saddam had a need to portray confidence and strength and to have potential replacements echo this view. The closest any analysts have to his most honest reflections are the so-called ‘Saddam tapes’, which are transcripts of conversations he had with his most trusted advisors. These however contain little material from the post Desert Storm era. Moreover, a misperception based account of Saddam’s decision making would also have to explain why, if he truly was overconfident of his abilities as a military commander, this would not also have extended to his abilities to lead an insurgent campaign too.

Other captured Iraqi documents, in fact, paint a rather different picture of the Saddam regime’s decision making process, one more in tune with the Brennan-Tullock principal agent model.

For one thing, it is not entirely correct to say that all retrospective Iraqi accounts of Desert Storm consisted of delusional chest pounding to appease Saddam. For instance, a 1995 report for Saddam by officers of the Republican Guard expressed a relatively candid assessment
of the Iraqi Army’s shortcomings relative to the Americans. Although it contained the obligatory references to the ‘great triumph’ of the ‘Mother of all Battles’, it also stated that:

“Do not treat (the Americans) in the same manner and way that was dealt with Iran during the blessed Iran-Iraq War because the current enemy possesses air superiority and the best technology and he is not like the traditional enemy such as the Army of the Third World.”

“Units, officers and units that are in contact with the enemy must be trained in withdrawal combat with fire, movement and potential withdrawing activities, since the situation may require a forced withdrawal when an increase in the capability of a hostile superior power is possible, leading to a disorganized withdrawal. Therefore there should be training in preparing an orderly withdrawal.

“An acceptable level of training must be reached for units, sub-units and whole units to manage night operations.

“Training should be focused on the lower levels (section, faction, platoon, company, and battalion). There are significant weaknesses in training at these levels. Therefore, focus must be placed on training the section because it is the basis of the training, and give it great importance and intervention by other headquarters in training it.”

If the flow of information to Saddam about the Iraqi Army’s effectiveness was less flattering than has often been depicted, the reasons for his decision to mount a conventional rather than an insurgency campaign appear less as a result of misperception. Saddam’s choice was not necessarily based on a delusional belief that his Army could actually defeat the United States but rather recognition that, in light of his inability to trust his own population to follow him when not easily observable, a conventional war was the least bad of a number of terrible options. Saddam also hoped that if his forces were able to hold the United States for just long enough, Russian and French pressure at the UN would force the Bush Administration to make a deal which would allow him to remain in power. Moving straight to a guerrilla war, by contrast, would create severe

38 CRRC SH-RPGD-D-000-490, ‘Military Lessons Learned from the Mother of all Battles’, p5-11, 38, 40-42, 47
principal agent problems and put Saddam at great risk of being killed or captured by either the United States or Iraqi opposition groups.

For instance, a sharp analysis of forthcoming developments in Iraq written by an al-Qaeda affiliate the Center for Islamic Studies and Research claimed that the best way to fight the ‘Crusaders’ would be through ‘guerrilla warfare’ but that Saddam’s regime could not use this method because:

“When the Crusaders enter Baghdad, the Iraqis will never be able to apply guerilla warfare and maintain their authority and structure as a government. Therefore, the question of the fate of Saddam and his party becomes irrelevant. What is important is whether he and his party will have any control in the country, lest the Crusaders enter the city. Our answer is that the guerilla warfare method conflicts with maintaining authority, especially in the cities, and more so in Baghdad, the center of Iraqi power.”

Even more compelling support for this proposition comes from the regime’s own internal correspondence. For instance, a Report from the Ministry of Defense to the Army General Staff shortly before the US invasion in 2003 recommended the creation of ‘special commandoes’ along the lines of the US Rangers who would be able to harass the invaders behind their lines. However, because these units would be operating outside the areas controlled by Saddam’s regime, the Report stressed that the commandoes needed to be chosen ‘with care’ and that ‘(their) allegiance should not be suspect’. To this end, the commandoes had to be committed Ba’athists. In addition, the Directorate of Military Intelligence was ordered to establish a committee to ‘determine the loyalty’ of all those selected for such missions. Although it is not clear from the document whether these commando units were ever formed, given that the document dates from

39 CRRC SH-MISC-D-000-479, ‘Recommendations and Military Instructions for the Mujahidin in Iraq’, p10-13
just one month before the invasion, it is unlikely that the security checks could have been carried out on time.

Ba’ath Party branch heads in the predominantly Shi’a city of al-Diwaniyah echoed this lack of trust. Their internal correspondence on the prospective American invasion is at least as preoccupied by dealing with an internal uprising as by fighting the invaders.\textsuperscript{41}

Similarly, in an analysis strikingly similar to that of al Qaeda, the regime’s emergency plan for the defense of Baghdad listed the mission as:

\textit{“First (my italics): to take the necessary action to firmly stop any riot or rebellion acts in Baghdad.”}\textsuperscript{42}

Only in Fallujah, a city populated by many of Saddam’s tribal kinsmen many of whom were tightly bound up with the Ba’ath Party ‘club’, did the regime feel it enjoyed sufficiently high levels of trust to make an insurgency campaign an option. There, in contrast to Baghdad or even more to southern Iraqi cities like al-Diwaniyah, the local Ba’ath Party branch head urged the local authorities to ‘fight the enemy conventionally and unconventionally’.\textsuperscript{43}

In short, then, the evidence for Brennan and Tullock’s rationalist principal agent theory is at least as convincing as that for the misperception theory. Had Saddam simply instructed the Iraqi Army to cast off its uniforms and blend into the civilian population as insurgents rather than fight conventionally, the result would almost certainly not have been an insurgency controlled by the Ba’ath, at least not outside the party’s Tikriti strongholds. Rather, the overwhelming majority would have either simply gone home and done nothing, cooperated with the Americans or joined

\textsuperscript{41} CRRC SH-BATH-D-000-778, ‘Correspondence by Ba’ath Party Branches on the Defense of al-Diwaniyah’, p10-12, p56
\textsuperscript{42} CRRC SH-MISC-D-000-386, ‘Correspondence about Baghdad Emergency Plan’, p34
\textsuperscript{43} CRRC SH-BATH-D-000-689, ‘Letters to Ba’ath Party Branch Heads on Resistance’, p8
alternative insurgent groups which were as opposed to Saddam as to Bush (such as the Mahdi Army). This outcome was clearly foreseen by the regime’s insiders, and it is of course more or less what actually did happen once conventional Iraqi resistance collapsed. In light of this, Saddam and his loyalists made the judgment before the war that conventional resistance, which at least allowed them to monitor and control their population more easily, was the least bad option. It is not clear that any rational actor, in Saddam’s shoes, would have acted very differently.

This discussion points up a final connection between coup proofing and military effectiveness. That is, in addition to its direct effects on destructivity through biased promotion policies, internal insecurity acts to constrain leaders whose armies are ineffective for other reasons (in this case low basic literacy) from resorting to the kind of guerilla tactics which might be more effective against the enemy than conventional warfare.
5. The United States

“On one occasion, two Iraqi T-55 tanks appeared immediately behind the fuel trucks in the combat trains of an armored task force. These rose in revetments within a hundred meters of the task force’s command sergeant major (CSM), who had retraced the route of advance with three drivers armed with M16s to flush out what they thought was a single sniper. The CSM had seen green tracers – American tracers were red – and was concerned for the security of the fuel trucks. What followed became a confused melee as the tiny contingent was drawn first to one antitank guided missile (ATGM) position and then to another. The Iraqis revealed themselves by firing ATGMs, and the M16 marksmen cut them down. The ATGM positions featured bunkered larders of munitions; these the Americans methodically blew up with thermite grenades. At one bunker, the CSM met an Iraqi departing as he was entering and killed him at the muzzle of his .45 caliber pistol. When the T-55s rose up, the CSM clambered aboard the closest and tossed a thermite grenade into its hatch. The second T-55 was destroyed by fire from an unknown source. For a few moments the most critical action on NORFOLK was one NCO and three soldiers fighting totally outnumbered in the dark.”

Hogan, Fisch and Wright – The Story of the Non-Commissioned Officer Corps: The Backbone of the Army

The success of the US Army in dispatching autocratic foes such as Iraq is one of the main motivating cases behind democratic triumphalism. Even as late as the 1960s, many policymakers and analysts believed that America’s democratic system hindered rather than helped the effectiveness of the US military (Brands 1989). Only after Desert Storm did articles such as Powerful Pacifists (Lake 1992) and books such as Democracies at War (Reiter 2002) make the contrary case. As measured by Polity, the United States has been the most consistently democratic major power in history. Consequently, its post-World War Two military dominance appears to confirm the democratic triumphalism thesis.

On many other independent variables analysts suspect to be important for military effectiveness, the United States has a mixed score. Most obviously, the United States scores highly on ethnic fractionalization (Alesina, Devleeschauwer, Wacziarg, Kurlat and Easterly

\[\text{http://www.systemicpeace.org/polity/polity4.htm}\]
2002). In addition the distinctions between African-Americans, whites and Latinos, the United States has also seen strife between new immigrants and natives and between different categories of white Americans – hostility between ‘WASPs’ and German, Italian or Irish-Americans for instance (Costa 2008). The fact that these historical distinctions have not hampered American fighting effectiveness could mean many things, as we shall explore below. It could mean that ethnic fractionalization is less of an insuperable obstacle to destructivity than has been though. It could also mean that it is important but that it has been outweighed by the causal importance of democracy in the American case.

The degree of external threat faced by the United States has varied over the decades and has been hotly contested. From a strictly geographical perspective in contrast to, say, Germany, the United States is highly invulnerable. Ever since Britain moved to a defensive posture in North America, the US has been bordered by two small, weak neighbors. One of those neighbors, of course, has been a staunch US ally since World War Two and had had few serious intentions of initiating hostile actions against the United States for years before.

Especially since the Second World War, however, US policymakers have had a more expansive definition of American security needs than simply the defense of the immediate homeland. American strategists have seen the defense of Western Europe and Northeast Asia as core national security interests, necessitating the maintenance of a large and effective American Army (Layne 2006). However, this has been vitiated by many factors. First, unlike classically vulnerable states such as the Kaiser’s Germany or Israel, the United States had in its strategic goals direct backing from a number of powerful allies through NATO. Of course, the importance of this factor should not be overstated – the incentives America’s allies had to free-ride on
American security provision meant that the United States could not rely on this source quite as much as Americans would have liked (Olson and Zeckhauser 1966). Second, the US nuclear arsenal led many policymakers to argue that conventional forces were of lesser importance (Brands 1989). Although ultimately advocates of ‘flexible response’ won the argument that the United States could not rely solely on nuclear weapons in the Cold War (Brands 1989), nuclear weapons were another factor which could substitute for conventional forces and hence lowered the external ‘demand’ for military effectiveness. Third, of course, the end of the Cold War removed a major external motive for American policymakers to foster destructivity. The United States has had no major peer competitor since 1990, though China may be stepping into the role today. Instead, the US has faced a variety of smaller threats, many of which require capabilities other than competence in inter-state war. In short, then, the United States has never faced the same kind of geographical and strategic vulnerability of a Germany or an Israel. Only during the Cold War can it be maintained that it had a strong ‘external’ drive requiring it to develop a highly effective Army. The persistence, indeed the increase in the US Army’s destructivity since the end of the Cold War is therefore a problem for the perspective that military effectiveness is driven by strict necessity.

Along other dimensions, however, the United States is crucially strong.

For one thing, US Presidents benefit from the stable mutual expectations of civilian rule generated by a long lasting constitutional arrangement. The US Constitution is, in fact, one of the world’s oldest (Elkins 2009). The very fact that the Constitution has existed for so long should have produced a strong shared belief amongst US military officers that a successful coup is unfeasible, even if some may have occasionally secretly harbored the thought that it would be
desirable. In consequence, the President of the United States should have the confidence to allow
talented individuals of any political persuasion or ambition to rise through the ranks of the US
officer corps without fear of being violently deposed. This does not mean to say, of course, that
relations between US officers and the President should be or will always be harmonious or that
the President might not occasionally promote those senior officers whom he finds politically most
congenial. The President of the United States, however, needs to worry about his senior Generals’
giving a bad press conference or interview, or perhaps even running against him for the opposing
party in his reelection campaign. These concerns are an order of magnitude different than those of
the Executive of a coup vulnerable state such as Iraq, who knows, and whose Generals know he
knows, that the prospect of a violent seizure of power by the Army is a distinct possibility.
Consequently, the President should have less need to interfere in military promotions and
recruitments at the margin than his counterpart in more coup vulnerable states. For their part, this
should generate incentives for US officers to work hard to master military skills rather than rely
on political loyalty for advancement.

Second, the United States has also benefited from a high level of literacy by global
standards throughout its history. At the time of the World Wars, partly due to immigration from
Central and Eastern Europe, literacy in the United States was slightly lower than in Western
European countries such as Britain and Germany. Nonetheless, the figure was still well over 90%.
The US Army therefore benefited from a large pool of well-educated enlisted men from whom an
NCO corps could be recruited. By the end of the Cold War, of course, the United States had
reached 100% literacy (Banks 2011). Favorable alternative opportunities and problems with post
service employment – issues which, as we have seen, also dogged fellow liberal market economy
Britain – led to the US Army occasionally relaxing its educational criteria. However, even the
lowest entry standards for US enlisted men and NCOs still compare favorably with those of developing countries such as Iraq. On this base, a rigorous NCO training system could be built.

In short, then, a hypothetical individual who was unaware of the actual performance of the US Army but was aware of the prevailing theories of military effectiveness would derive the following predictions.

\( H_1 \): Democratic triumphalism. The US Army should fight with greater effectiveness, motivation, initiative and skill than its autocratic counterparts, even where these counterparts are also from highly developed countries. Ideals of democracy and freedom should show up in account by US soldiers of their combat motivation.

\( H_2 \): Ethnic fractionalization. The US Army should have difficulty motivating small units of men to fight with cohesion alongside each other. This is because these groups will frequently consist of individuals from differing ethnic groups. In addition, less favored ethnic groups may be less motivated to fight and open to propaganda appeals from American enemies.

\( H_3 \): External threat – the ‘demand’ for destructivity. The US Army’s destructivity should be highest during the Cold War when the external conventional threat was highest. The fall of the Soviet Union should see a reduction in US fighting effectiveness.

\( H_4 \): The Funnel

a) The Officer Corps

The endurance of the United States constitution should have generated stable mutual expectations among US military officers of civilian rule. The idea of a coup against the President should appear absurd and unthinkable even to officers who are personally opposed to the
President’s policies. Knowing this, successive US administrations will do little or no political prescreening of officer candidates and will promote mostly on merit from within the set of existing officers. Interestingly, however, this theory predicts that this will not always have been the case in the US Army. In the early years of the Republic, before the Constitution had acquired the status it currently has, politically motivated officer recruitment and promotion should be observed more widely in the US military.

b) Enlisted to NCO Level

Given that the United States achieved near universal literacy over half a century ago, the alternative options for an individual who is able to read and write but has little more education will be relatively poor. Consequently, the US Army should be able to recruit individuals with the right educational foundations on which to build a good NCO training system. This does not mean to say, of course, that American NCO recruits will always be well educated by American standards. The US Army’s educational requirements may sometimes be lowered in response to recruiting difficulties, especially when the economy is booming and alternative options are high. However, even a relatively poorly educated American will still have better basic literacy and numeracy than an average enlisted Iraqi, something which will allow American NCO candidates to pick up more theoretical military knowledge than their Iraqi counterparts. Knowing that American NCOs will thus have the military knowledge to understand their commanders’ intentions and adapt to local knowledge about the battlefield accordingly, American officers will be more willing to devolve power to them. This in turn should allow the US Army to adopt the modern system and increase destructivity.

5.1 Democratic ‘Triumphalism’
The performance of the US Army against a number of autocratic foes in recent decades has inspired many of the causal mechanisms said to underpin democratic battlefield effectiveness. Both neutral and hostile observers have commented on the courage and cohesion of US front line troops, the skill of American officers and the greater scope for initiative on the part of lower level US leaders. For instance, General Hamdani of the Republican Guard made the following remarks on the capabilities of his American opponents:

“The American soldier is educated and civilized; he is better at looking for alternative solutions in a conflict than the Iraqi soldier.” (Woods et al 2011)

“I used to ask the commanders, the division and brigade commanders, after showing them a picture I had of American soldiers standing all straight in their uniforms next to a convoy. I would then compare that depiction to regular Iraqi officers, asking them ‘Can you explain to me why the Iraqi soldier looks this way, while the American soldier looks that way? One of them (the Iraqi) looks disappointing, while the other one (the American) is standing there, confident and proud, with his Kevlar helmet looking great.’ I even told Saddam this and commented: ‘The training, preparation level and discipline of the soldiers should be the American way.”’ (Woods et al 2009)

“The American soldier is organized and respected. He gives you the impression that he respects himself as a human being with rights.” (Woods et al 2009)

“We Iraqis have to admit that the American Army showed courage in the last approach operations. Honestly, the Americans fought with such courage, zeal and discipline and carried out the mission...which was not easy as they were always moving and their soldiers fought with great courage.

“The American Army is fighting using an unusual counter-guerilla war for the last four years that would make any other army collapse. But the American Army is still holding there, which underlies that this is a great army which has wonderful training and great officers. There is an exception for every rule, of course, but in general the American Army has proved that for the last four years that while the Soviet Army would have collapsed and any other great European Army would have collapsed, they have not. Four years of fighting and the American soldier is still disciplined and zealous and bears his losses and this is a unique characteristic of this army.” (Woods et al 2009)
Many of these observers, including it appears Hamdani himself, might attribute these American strengths in decentralization, motivation and skill to American democracy. However, from the point of view of democratic triumphalism, it is intriguing that many of the US military’s strengths result at least in part from a decades-long conscious strategy to emulate many of the military institutions and concepts pioneered by autocratic Germany. Although American observers outside a relatively small number of military historians and theoreticians do not generally make much of it, the influence of the German model on American military institutions has been substantial since at least the days of the Kaiser.

Most clearly, the German influence can be seen in the US Army’s Command and General Staff College at Fort Leavenworth, Kansas. The German Army’s high destructivity as revealed in the Franco-Prussian War had impressed many foreign states and pushed them towards copying German military institutions. Much of the design and curriculum of the US Army’s Command and Staff College at Fort Leavenworth has, since the early twentieth century at least, been based on German models. As a Leavenworth lecturer pointed out in 1907:

“Even the United States, whose military policy and institutions possess so little in common with those of the German Empire, have not failed to follow in the wake of our European contemporaries. Our Field Service Regulations unmistakably show the impress of German thought. Von Moltke teaches us strategy, Griepenkerl writes our orders, while von der Goltz tells us how they should be executed.” (Nenninger 1978)

Later in the century, the establishment of the School of Advanced Military Studies (SAMS) at Fort Leavenworth for elite level staff officers was a direct imitation of the Imperial German Kriegsakademie and its role in training the Grosser Generalstab (Shamir 2011).

Much of the skill which mid to senior-level American officers have and which so impressed Hamdani derives from the military knowledge acquired through these institutions. This
influence comes not from America’s democratic system but from imitating institutions and practices developed in the Kaiser’s Germany.

In terms of the courage and endurance of small American units mentioned by Hamdani, connections can also be drawn to lessons the US military learned from the *Wehrmacht*. The propensity of German units to continue to fight in World War Two past points at which American or British troops would have surrendered generated much interest in the post-war US military and security community. Shils and Janowitzs’ work on primary unit cohesion was the most influential product of this interest. This stated that the German Army’s policy of ensuring that small units of men were kept together for as long a time frame as possible was the key in motivating German troops to fight (Shils and Janowitz 1948). The US Army’s policy prior to that point, by contrast, had been to rotate men on leave periods and to bring replacements into front line units rapidly in order to maintain paper strength. Consequently, American troops were generally less able to form the kind of long lasting bonds of trust amongst one another that were so crucial for fighting motivation. Not only did this mean that American troops were more likely to surrender under less adverse conditions than Germans, but it also led to other behaviors inconsistent with fighting effectiveness such as hospitalizations for psychiatric trauma, self-inflicted wounds, refusal to press home attacks against determined resistance and outright desertion (van Creveld 1982).

Shils and Janowitzs’ insights into primary unit cohesion derived from a comparison between the more highly motivated German Army and the less motivated US Army were incorporated into new US personnel practices. For instance, the COHORT system (cohesion, operational readiness and training) was directly inspired by the theory of primary unit cohesion and aimed to ensure that American soldiers spent sufficient time together in training and leave as
well as combat in order to develop the bonds of horizontal trust thought to have motivated their Wehrmacht predecessors (Siebold 2011).

Finally, the importance of decentralization and initiative in the modern US Army derives not from America’s democratic culture but again partly from a conscious emulation of German military doctrine, specifically *Auftragstaktik*. The concept, which the US military translated into English as ‘Mission Command’ became highly influential in US Army circles through the work of theoreticians such as William S Lind. Faced with the problem of defending Western Europe against a numerically superior and technologically advanced Red Army, Lind argued that the US military could follow the defensive successes of the Wehrmacht on the Eastern front by incorporating the principles of *Auftragstaktik* systematically into US training and doctrine. Lind’s recommendations formed the basis for a number of reforms within the US military in the late 1970s and early 1980s (more of which later), which bore fruit in the crushing conventional victories in Iraq (Shamir 2011).

Consequently, it is difficult to see that many of the undoubted strengths of the US Army – cohesion, skill and decentralization – result from the democratic form of government per se given that many of these strengths owe their origins to institutional innovations from the autocratic Germany of Kaiser Wilhelm II and Adolf Hitler. Indeed, what makes it even harder to view contemporary American military strengths as a result of democracy is that they have not always been characteristics of the US Army in the eyes of most observers, even though the United States’ level of democracy has not changed.

As the above discussion indicates, the combat motivation of the individual American soldier in World War Two, for instance, was considered lower than that of his German opponents.
Although a higher proportion of German troops became prisoners of war than Americans, this statistic is misleading as it includes Germans who surrendered at the war’s end and neglects the fact that American forces in Europe were almost always fighting on the strategic offense (Ferguson 2004). American troops, like the British and Canadians and unlike the Germans, also had the ‘option’ of turning themselves in to field psychiatric units for battle stress, a phenomenon which severely depleted the manpower of many Allied units in Normandy (Copp and McAndrew 1990). Moreover, like their British counterparts, it was believed that American commanders were reluctant to press home attacks at close quarters for fear that their men lacked the motivation for such brutal fighting. As a result, transcripts of German PoWs’ conversations recorded by Neitzel reveal a far lower opinion of American combat motivation than Hamdani was to show several decades later. German troops described the Americans as ‘unable to endure’, ‘inferior to us in close quarter fighting’ and as ‘having no idea of a really hard fight’. Speaking of his experiences in Tunisia, Wehrmacht General von Arnim claimed that ‘these pig-dogs (Sauhunde), these Americans, they all run away when they are really properly attacked’ (Neitzel 2011).

The opinion of both German observers and military historians on the skill and organization of the US Army in World War Two runs remarkably parallel to the same judgment on the British Army of the time. The US Army of World War Two was judged to be overly centralized and top down in its decision making, too reliant on technological and numerical superiority to win battles and too top heavy in the number of officers relative to NCOs and enlisted men. German commanders specifically predicated their operations on the assumption that the US Army was a less capable opponent than themselves – for instance, deliberately exposing their flanks in counterattacks on the assumption that American commanders would not be skillful enough to exploit the resulting German vulnerability (Shamir 2011). There are, of course, many
exceptions, especially celebrated commanders such as George S Patton and J Lawton Collins. Nor should this discussion be taken to detract from the courage of the US troops who won World War Two. The point is simply that when faced with an Army which was autocratic but at a similar level of economic development in World War Two, the US Army was less skillful, cohesive and decentralized and thus exhibited lower destructivity than Germany. The United States of course emerged victorious, but as described above, this was because US numerical and technological superiority and crucially the role of the Soviet Union in grinding down the Wehrmacht in the East was sufficient to counteract the qualitative German advantage on the battlefield.

In short then, although the US Army exhibited strengths in terms of decentralized initiative, skill and combat motivation relative to autocratic Iraq, a look back further in US military history casts doubt on the notion that these strengths were related to American democracy. Rather, many of the institutions which fostered these strengths were based on innovations from then autocratic Germany. When the United States has faced autocratic but developed enemies such as Germany in the past, the US has in fact lagged behind on these factors.

5.2 Ethnic Fractionalization

The United States Army has historically been a pioneer not only in inducing different ethnic groups to fight together under a common flag but also in studying systematically what happens when they do. American military history also shows the difficulty inherent in defining what constitutes a separate ‘ethnic group’. An American military unit which would nowadays be considered homogenously white would have struck observers of the Revolutionary War or the
Civil War as ethnically mixed – Kahn’s study of the Union Army, for instance, identified at least four different ‘ethnic groups’ amongst white soldiers – native-born Americans, German-born Americans, British-born Americans and Irish-born Americans. An entirely white Union platoon one third of whom were born in Germany, one third in the United States and one third in Ireland would have been considered highly diverse. With large scale Southern and Eastern European immigration, the US Army of World War One was even more heterogeneous. The famous ‘Lost Battalion’ of the Meuse-Argonne offensive, for instance, is thought to have comprised native speakers of over 43 languages (Segal and Segal 2004). Thus even before military desegregation and the contemporary influx of Hispanic immigrants from Central and South America, the US Army was one of the most ethnically diverse of modern times. The modern American Army of course is even more mixed. By 2002, 22% of US military personnel are African American and 10% Hispanic (Segal and Segal 2004), a term which of course encompasses a variety of national origins such as Mexican, Puerto Rican, Cuban or El Salvadorian. Besides smaller but not insignificant numbers of Native Americans, Pacific Islanders and Asian Americans, the remainder are mostly white. Yet of course these whites comprise the descendants of the polyglot soldiers of World War One rather than representing one sole European nationality. Thus for those who believe that ethnic fractionalization is an important inhibiting factor on destructivity, it is remarkable that the US Army has been able to function at all, let alone that it is the world’s preeminent military force. These analysts would especially expect that desegregation, by creating ethnically heterogeneous small units, would lower American combat motivation and increase problems such as desertion, surrender and other forms of shirking. A separate concern is that less favored American minorities might be tempted by appeals from America’s enemies to surrender, mutiny, desert or otherwise shirk. Such appeals have been made in many other historical contexts
by the Russians to Slavic soldiers of the Austro-Hungarian Empire in World War One (Baierlein 1926), by the Japanese to Indian soldiers in British service in World War Two and by the British themselves to Arabs fighting for the Ottomans. In the American context, historically maltreated or marginal minority groups such as African-Americans or Hispanics would seem obvious targets for this kind of appeal.

In contrast to these concerns, the effectiveness of the US Army has increased rather than decreased as the US Army has become more ethnically diverse. As we have seen, the segregated US Army of World War Two was a relatively unwieldy organization that lacked the skill and motivation of its German opponents. By contrast, the modern, racially integrated US Army has, by most accounts, more completely mastered the high skill levels demanded by the modern system. Of course, this does not mean that increased diversity has caused an increase in destructivity – other factors have also changed in the meantime, especially the move from a conscript to an all-volunteer force, which coincided with a large increase in the proportion of African-Americans in the US military. Nonetheless, an increase in the US Army’s efficiency as it has become more ethnically diverse ought to give pause for thought to those who believe that ethnic homogeneity is a key determinant of destructivity. If it can further be shown on the micro-level that racial and ethnic integration has helped or at least not hindered individual American units, then the link between ethnicity and fighting capabilities must be rendered highly suspect.

In fact, the US Army commissioned large amounts of social scientific research into the performance of racially mixed versus homogeneous units both before and after the Army was desegregated in 1954. This research was revived during the 1990s and 2000s as analysts

3 http://www.pbs.org/lawrenceofarabia/revolt/index.html
attempted to determine what, if any, damage would be done to US fighting effectiveness by the repeal of the ‘Don’t Ask, Don’t Tell’ legislation banning openly gay servicemen from the military. By looking again at the consequences of desegregation, researchers hoped to gauge the impact on small unit cohesion of the forcible integration of new troops whose personal characteristics differed from those of existing unit members.

Pre-desegregation studies of the effectiveness of experimental mixed race units showed that their performance was superior to that of their more homogeneous counterparts. These studies helped advocates of desegregation make their case against military skepticism. The follow-up studies on the effects of ethnic fragmentation of unit performance since then have broadly reached the same conclusions, and changed the way in which unit cohesion is now understood.

For one thing, studies have begun to draw a distinction between ‘social’ and ‘task’ cohesion. ‘Social’ cohesion refers to the degree to which troops have common bonds and a sense of shared identity outside of their military duties. ‘Task’ cohesion, by contrast, refers to the extent to which troops trust one another to offer mutual support in situations of great danger. US military operations research has stressed that the former is neither a necessary nor sufficient condition for the latter. Internal polling has shown that soldiers draw a distinction between those of their colleagues with whom they would be happy to socialize outside of the military and those whom they trust to help them out in the performance of their tasks. Good friends can be unreliable colleagues but trustworthy comrades do not necessarily have to be good friends (MacCoun and Hix 2010).
Whereas ‘social’ cohesion, therefore, might very well be damaged by ethnic heterogeneity, this is not necessarily the case with ‘task’ cohesion. The US military’s doctrine is that the shared experience of training, good leadership and the existence of mutual danger can in fact create ‘task’ cohesion even without a high degree of prior ‘social’ cohesion.

Nonetheless, much evidence shows that this ‘task cohesion’ can itself evolve into ‘social cohesion’ even among soldiers from different racial groups who may not have held favorable images of each other when entering the military.

On an anecdotal level, accounts of the 21st Century US military suggest strong social ties developing between soldiers in the same unit of varying ethnicities. Sebastian Junger’s study of an airborne platoon in Afghanistan – War – relates the strong feelings about the death of their Colombian born Sergeant Juan ‘Doc’ Restrepo (after whom they named their outpost) by US enlisted men of white, African-American, Hispanic and Asian American origin (Junger 2010). These strong cross ethnic ties can have very negative consequences for counter-insurgency if not for war fighting – for instance, the massacre of Iraqi civilians at Haditha in Iraq was carried out by a mixed white and Hispanic Marine detachment led by a white Sergeant – Frank Wuetterich looking for ‘revenge’ for the death in an IED attack of a popular Hispanic Lance Corporal- Miguel Terrazas⁴.

More general evidence that the bonds created by shared military service can help to build social ties across racial groups comes from studies into the demographics of areas with large military populations. These have found that, even controlling for other factors, areas of the United

⁴ http://www.cbsnews.com/8301-18563_162-57354199/haditha-massacre-defendant-we-did-what-we-had-to/
States with a high military population have smaller inter-racial earnings gaps and less residential segregation by race than other areas (Moskos and Butler 1996).

In short, then, the US military is a very tough case for those who believe that ethnic fractionalization lowers combat motivation. The United States, as a matter of policy, sponsored the creation of an Army which is ethnically mixed down to the small unit level and yet American combat motivation remains high. In fact, if anything, combat motivation in the US military has increased since desegregation. Even individuals who come into the US military harboring prejudices against members of other ethnic groups can be induced through training to form rudimentary ‘task cohesion’ with them, trusting them to cooperate under fire even if not feeling close to them socially. However, there is also evidence that such ‘task cohesion’ can evolve in such a way as to reduce previously held prejudices and build strong social ties between men of different ethnic groups – as numerous accounts of US small unit combat in Iraq and Afghanistan reveal.

At the same time, concerns that less favored minorities would be less motivated to fight for the United States appear overblown. Certainly, African Americans and other minorities have frequently been subjected to appeals by American enemies from Imperial Germany to al Qaeda to lay down their arms or turn them against their white compatriots⁵. African Americans voters are also, in general, less likely to hold favorable views of the intentions behind American foreign policy or to support specific US military interventions, though this is less true of black military personnel than of black civilians (Moskos and Butler 1996).

Yet the marginal contribution of any one soldier to the broader goals of a military mission is usually very small. As has been discussed in previous chapters, this implies that a given soldier’s approval or disapproval of his mission will have little effect on his motivation to fight either way. In this context, even if African American soldiers disapprove of the Iraq War or American foreign policy more generally, this will have less of an effect on their willingness to fight than the rewards which accrue to them as individuals from fighting well.

This explains why, for instance, concerns about the motivation of African American soldiers to fight were higher in the Vietnam War than any subsequent American conflict. Black Americans fighting in the 1960s were principally draftees with little intention of making a career in the military, hence the popularity of Black Panther paraphernalia in the ranks and strongly expressed opposition to the war (Edgerton 2001). African Americans fighting in Desert Storm or Operation Iraqi Freedom, by contrast, were often attracted by the superior pay and promotion opportunities the Army offered relative to civilian life (Edgerton 2001). Good combat performance on their part would have little effect on the overall outcome of the war but a large effect on their own promotion prospects and subsequent pensions.

These considerations explain why the African American community has expressed higher levels of opposition to America’s wars while sending a disproportionate number of its young men to fight in them without any noticeably higher motivation problems. No African American soldiers are known to have gone over to al Qaeda (since 9/11). African-American soldiers are more likely than their white counterparts to fall foul of the military justice system, although they are also more likely to complete their enlistments successfully than white Americans (Edgerton 2001).
Neither potential mechanism leading from ethnic fragmentation to fighting effectiveness therefore works in the American case. The ethnic diversity of the US Army neither undermines cooperation amongst soldiers at the small unit level, nor do less favored American minorities exhibit lower fighting motivation.

At this stage, however, the objection might be raised as to whether this is simply the result of a uniquely American ‘melting pot’ culture which can create a shared identity from many diverse ethnic groups. The preceding macro-comparative statistical analysis suggests not. Moreover, many other historical cases suggest that the Army as an agent of interethnic harmony is not a uniquely American phenomenon. Historians suggest the role of the French Army of the Napoleonic period in creating a ‘French’ identity among the inhabitants of disparate regions such as Brittany or the Basque Country, who would previously have conceived of themselves as ethnically distinct (Weber 1976). Even the Iraqi Army was seen by many Iraqis from all major minorities as an instrument of inter-ethnic cohesion (al Marashi and Salama 2008). Returning to the American case, indeed, it should be pointed out that the successful integration of minorities into the US military involved not just the ‘melting pot’ success stories but also those ethnic groups who have had the most difficulties in civilian American life – African Americans and Hispanics. Had the US military only been able to induce Irish, Germans, Italians and WASPs to fight together, one might have been tempted to attribute this to the melting pot. The fact that it has been able to forge a highly successful fighting force out of these groups and non-white ethnicities suggests that ethnic diversity genuinely need not be a serious barrier to high destructivity.

5.3 External threat
Assessing America’s ‘demand’ for destructivity is complicated by the degree of disagreement amongst strategists. This disagreement is both empirical and theoretical in nature. On the empirical side, analysts have disagreed about the precise nature of the external threat which the United States has faced at various points in history. On the theoretical side, many have also had different conceptions of how the United States ought to respond to a given external threat situation. Nonetheless, as I will outline below, I believe there are some predictions common to most strategic thinkers about the fighting effectiveness of the US military, predictions which are confounded by the empirical record.

Some strategists such as Henry Kissinger supported a more forward stance, involving the United States in a number of small wars to contain communism in the developing world as well as defending Western Europe and Japan (Suri 2007). Many, however, stuck to an ‘offshore balancing’ middle ground – supporting a strong presence against Soviet aggression in core areas of the global economy such as Europe and Asia while remaining skeptical of peripheral interventions such as Vietnam (Mearsheimer 2005).

After the Cold War, strategists similarly diverged between isolationist, interventionist and offshore balancing assessments of US national security. Some continued to believe that US national security interests revolved purely around securing the US homeland and North America. Given the weakness of all other American states, this viewpoint saw the post-Cold War security environment as highly benign. Similarly, the offshore balancing perspective also saw little external threat to the United States after the fall of the Berlin Wall. Although offshore balancers saw the need for the United States to remain engaged in Europe and Northeast Asia to prevent the resurgence of great power rivalries in these areas, they generally did not see any immediate
prospect of this happening. They also tended to be skeptical of the gravity of ‘new’ threats such as rogue states or terrorism. Some strategic thinkers did not, however, view the international environment so benignly. Not only did they consider rogue states, nuclear proliferation and terrorism to be far graver dangers than their offshore balancing colleagues, they also believed the United States needed a relatively aggressive military posture to deter a potential ‘peer competitor’ from emerging (Posen and Ross 2006).

On the theoretical side, defensive realists would claim that a benign international security environment should induce military retrenchment. A world with few security threats provides the United States with an opportunity to wind down military commitments overseas and use the time and money thus saved to bolster America’s domestic economy \(^6\). Offensive realists, however, might claim that a great power such as the United States can never be satisfied even with a very preponderant power position, so that American policymakers should use the ‘unipolar moment’ to cement US military dominance \(^7\).

Thus the isolationist strand of American strategic thought would claim the United States’ external threat to be low by global standards throughout the late twentieth and early twenty-first century. With the North American continent itself secure from conventional invasion and the US nuclear arsenal sufficient to deter a Soviet attack, isolationists would view the United States as having a low level of ‘demand’ for a highly skilled military. Offshore balancers, by contrast,

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\(^7\) It should be noted, however, that although America’s most prominent offensive realist’s – John Mearsheimer’s thought appears to point in this direction, Mearsheimer’s actual policy recommendations shy away from this. The most famous statement of a forward ‘offensive realist’ strategy is the well-publicized agenda of the Project for the New American Century. http://www.newamericancentury.org/RebuildingAmericasDefenses.pdf
would take issue with this view with respect to the Cold War period but implicitly accept it afterwards. The more interventionist strands would certainly believe the external threat was very high in the Cold War, though they may accept that it is a little lower, or at least no higher, since then.

To relate this into a prediction for the US Army’s fighting effectiveness, it is worthwhile to recall that destructivity does not come cheaply. Thus it is not true that all states, even if they are only considering their own security, would always want their military skill levels to be as high as possible. It requires that the military offer a lifelong package of earnings which is sufficiently competitive to attract good quality individuals from civilian alternatives. This means pay, pensions and, as we have seen in the British and German cases, preparing soldiers for post-service careers. The less the military spends on them, ceteris paribus, the less competition there will be from talented individuals for promotion within the officer and NCO corps and hence the lower the Army’s overall skill level. Yet pay, pensions and preparation for post-service employment are all very expensive, ongoing financial commitments. For most of US history, personnel costs have been the single biggest item on the defense budget. Even in today’s high tech, capital intensive military, these costs are the second biggest item in the defense budget after operating costs and maintenance, and far higher than the amount the Pentagon spends on either new weapons procurement or research and development. This, moreover, does not include veteran’s benefits which fall under the remit of the Department of Veterans’ Affairs.

9 US Department of Defense, Financial Summary Tables for the 2010 Financial Year
The opportunity cost of the resources which the United States (or any other country) spends in order to purchase more ‘destructivity’ therefore lies in either higher taxes, higher borrowing or reduced spending on other Government priorities (including military spending not related to personnel). At the limit, if the United States were to pay its officers and NCOs investment banker level salaries with commensurate pensions, it would undoubtedly produce an Army with an unbeatable level of skill. This would not, however, be a wise use of resources, even from a strictly realist standpoint, because it would undermine America’s fiscal and economic position to the point where it could be overtaken by other states in the long run.

Thus a realist would expect that as the degree of external threat diminishes, a rational state would actually choose to conserve its resources by reducing military personnel costs, even at the expense of potentially undermining military skill. Consequently, the realist prediction would be that a state’s destructivity would increase as the level of external threat rises and also decrease when the level of external threat falls.

In spite of the disagreements between the various schools of strategic thought, therefore, two predictions at least ought to follow from the above discussion. First, the US Army’s destructivity ought to have been at least as high during the Cold War as it was after the Cold War when the degree of external threat was lower. For the entire Cold War, the United States and its Allies faced a numerically superior Warsaw Pact with which it had a reasonably high chance of going to war. Although NATO enjoyed a qualitative edge in weaponry, its operational plans for war with the Soviets assumed that it would be fighting a desperate defensive battle for Western Europe against heavy odds\textsuperscript{10} – excellent skilled leadership would have been at a premium\textsuperscript{11}. By

\textsuperscript{10} See for instance “If NATO had to fight”, Chester Wilmott, Foreign Affairs, January 1953, p200-214

\textsuperscript{11}
contrast, the United States has enjoyed such a crushing numerical and technological superiority over its most likely potential conventional enemies in the post-Cold War era – North Korea, Iraq and Iran – that even a relatively unskilled US Army would be able to triumph over them. Of course, ceteris paribus skilled leadership was still important to the United States after 1990- it would prove very important in limiting casualties and ensuring quick victories. Nonetheless, given the increasingly favorable position of the United States in terms of numbers and technology relative to its potential enemies after 1989, a ‘demand side’ account of destructivity would predict that American fighting effectiveness would stagnate the more time elapsed since the Fall of the Berlin Wall.

Second, if external threat is the key determinant of destructivity, the US Army should have exhibited less pound for pound effectiveness than the Iraqi Army, controlling for technology. Although at first blush this appears counterintuitive, it is in fact perfectly logical if one believes that the external threat situation, or the ‘demand’ side of destructivity, is the key taproot. Iraq is surrounded by a number of potentially hostile neighbors with larger populations (especially Iran) and has few defensible frontiers. If Israel or Germany ‘needed’ to develop highly effective military forces, then surely the same is also true of the Iraqis. This does not mean, of course, that the United States ought to have been defeated by Iraq, given American technological superiority, just that if a state’s external threat situation were the key driver of military skill, then the Iraqis ought to have been at least as skillful pound for pound as the Americans.

In fact, neither of these predictions is borne out by the historical record.

11 US military analysts explicitly suggested learning from the Wehrmacht’s experience on the Eastern Front as an example of how superior military skill could offset Soviet numerical superiority. See “Lessons from the Past for NATO”, Richard F Timmons, Parameters, 14, 3, p3-11
As we have seen, no serious observers believe that the Iraqi Army displayed higher levels of skill than the Americans either in 1990 or 2003. The United States won in both cases not simply because of superior technology but also through a distinct qualitative advantage in military skill.

The first prediction, however, is trickier to evaluate. Clearly the US Army of 2003 has never and could never fight the US Army of 1971, for instance. Nor was the United States engaged in fighting the same or a similar enemy. Nonetheless, the consensus evaluation suggests that the US Army’s skill levels increased greatly over the 1970s and 1980s following a series of reforms, and have remained high since then. Thus the US Army of the post-Cold War period is, contrary to ‘demand side’ predictions, both more highly motivated and more skillful than its predecessor of the 50s, 60s and early 70s, when the degree of external threat was higher.

Eitan Shamir’s study of the pursuit of Auftragstaktik, or ‘mission command’ in the US, British and Israeli militaries, for instance, draws attention to the skill deficiencies in the US military in World War Two. Shamir cites General James Gavin’s complaint that “our American Army individually means well and tries hard..but it is untrained and completely inefficient”. Shamir goes on to point out that these shortcomings persisted into the Korean War, which partly in consequence degenerated into a war of attrition similar to World War One (Shamir 2011). Vietnam also highlighted many problems both with the skill and motivation of the US Army. Shamir cites one particularly egregious example of over centralized American command and control, reminiscent of the British Army of the Somme in all respects other than the technology employed:
“A helpless company commander engaged in a fire fight on the ground was subjected to direct observation by the battalion commander circling above, who was in turn supervised by the brigade commander circling a thousand or so feet higher up, who in turn was monitored by the division commander in the next higher chopper...watched by the Field Force (Corps) commander. With each of these commanders asking the man on the ground to tune in his frequency and explain the situation, a heavy demand for information was generated that could and did interfere with the troops’ ability to operate effectively.” (Shamir 2011)

This partly resulted from deficiencies in the NCO training system which the Vietnam War put in stark relief. As an official Army publication notes:

“Before 1971 a formal, standardized education program for the Non-Commissioned Officer Corps did not exist within the Army school system. For the vast majority of enlisted men, regardless of rank, ‘training’ meant nothing more than hands-on experience.” (Hogan, Fisch and Wright 2009)

“Losses in Vietnam led to snap promotions for ‘shake and bake’ NCOs with little formal training. Even without the losses, however, the US Army had prior to the 1970s, in the words of the official history, ‘considered on the job training adequate’.” (Hogan, Fisch and Wright 2009)

In terms of motivation, Vietnam and the immediate aftermath revealed some stark deficiencies. Especially in the later stages of the war, fatal assaults on officers by enlisted men became a serious problem (‘fragging’). Officers themselves sometimes resorted to drug abuse or ignored its prevalence in the enlisted ranks. As discussed above, African-American soldiers took to the open display of ‘Black Power’ symbols with the tacit acceptance of the Army command, worried about the consequences on morale of a crackdown. The immediate post-Vietnam period was considered, by many veteran officers, to be even worse – enlistment bonuses given to volunteers who signed up after the draft had the effect of recruiting individuals with lower educational attainment, criminal records and/or drug and alcohol problems. Criminal convictions within the military rose accordingly (Moskos and Butler 1996).
Only at the very end of the Vietnam War or after the war did a number of reforms take place which created the US Army of Desert Storm. These involved, as we have seen, an attempt to emulate many of the institutions which lay at the root of the Imperial German Army’s destructivity.

In 1971, the US Army adopted a standard formal education process for non-commissioned officers – the Non-Commissioned Officer Educational System (Moskos and Butler 1996). In order to recruit high quality candidates to put through this system, the Army moved from enlistment bonuses to educational incentives designed to improve the post-service prospects of former NCOs (more of which below). This gave the US Army for the first time an equivalent to the standardized training system the German Army’s NCO corps had traditionally enjoyed, though many decades later.

At the same time, as discussed above, the United States also established the School of Advanced Military Studies for mid to senior level officers in emulation of the German Kriegsakademie. Alumni of SAMS were the major planners behind Operation Desert Storm (Shamir 2011).

These reforms in part allowed the US Army of the late 1970s and early 1980s to move closer than it ever had before to adopting a variant of Auftragstaktik successfully. The more highly skilled middle ranking officers and NCOs produced by the training reforms were largely what gave the United States such a marked qualitative edge over the Iraqis in 1990. As Lind himself, a longtime critic of the US Army’s skill levels and command and control systems, said of Desert Storm:
“The American ground forces, Army and Marine Corps, on the whole practiced maneuver warfare. There were certainly exceptions…But the overall picture suggests this ship has come onto a new course, even if it had a long journey ahead before it was safe in the maneuver warfare harbor.” (Shamir 2011)

As will be discussed in the conclusion, the US Army’s performance in conventional warfare still has some critics amongst military analysts – Shamir, Joerg Muth and Martin van Creveld for instance (Shamir 2011; Muth 2012; van Creveld 1992). Nonetheless, both critics and supporters of the current US military agree that American pound for pound fighting effectiveness has increased substantially since the early 1970s.

Thus US destructivity bears little relation to America’s external threat situation. To be sure, the adoption of Auftragstaktik in the guise of mission command as the US Army’s command and control doctrine and the establishment of SAMS did coincide with the increased Cold War tensions of the late 1970s and early 1980s. However, the NCO reforms came during the period of détente. All of these reforms, meanwhile, have persisted into the post-Cold War era. George W Bush inherited a more skillful and motivated US Army in the peaceful unipolar year of 2000 than John F Kennedy did in the fraught and dangerous year of 1960. To say the least, it is not clear how a ‘demand’ side explanation of fighting effectiveness can account for this.

5.4 The Funnel

5.4.1 The Officer Corps

Jonathan Powell’s research maintains that once a state has been free of coups for 38 years, its risk of any subsequent coups drops to negligible levels. Looking at the United States from this standpoint, the American political system was already so deeply entrenched as to make...
a coup almost impossible by as early as 1814. Even by the time of the War of 1812, a military takeover in Washington DC would have seemed very implausible\textsuperscript{12}.

As a result of this, by the time the US rose to superpower status, American Presidents had long been past the stage at which they had to worry seriously about the threat of a military coup d’état.

In spite of their differences over other matters, this is one question over which American civil-military relations theorists are in violent agreement (Feaver 2003; Huntington 1967; Nordlinger 1977).

Nowhere is the implausibility of a coup in the United States shown than in civil military crises where there were both severe policy and/or personal differences between Generals and Presidents and the General enjoyed greater public support than the President. Such circumstances would have entailed a high risk of a coup in many countries, but in the case of the United States does not appear even to have been contemplated by the military leader in question. As in the British case, the apparent absence of any serious coup attempt makes it difficult to probe precisely why the US political system is invulnerable to a coup. However, the best evidence indicates that it is exactly the strong mutual expectations developed over time which make an American coup d’état so unlikely.

The modern US officer corps has in general tended to hold politically conservative views (Feaver and Kohn 2001). This of course means that when the Presidency is in the hands of the Democrats, there is far greater potential for civil military friction than when the White House is

\textsuperscript{12} That is, an American military takeover as opposed to an unfortunate British military White House burning incident.
occupied by a Republican. In many countries, such as Turkey (Jenkins 2001), Spain (Serra 2010; Palamino 2003) or Chile (Weeks 2003), a left leaning political leader facing a right leaning officer corps has historically been a recipe for a military takeover. There is certainly a great deal of evidence suggesting that many American military officers have viewed Democratic Presidents with distrust bordering on hostility.

Roosevelt, for instance, was very unpopular amongst conservatives for his New Deal social programs and this hostility extended to some elements in the officer corps. Douglas McArthur, for instance, said of the President:

“He never resorted to the truth when a lie would suffice”

“We’re even worse off with that Jew in the White House…You can tell by his name. Look at his face” (Pearlmann 2008)

When Nebraska Congressman AL Miller wrote to McArthur that:

“Unless this New Deal can be stopped, our American way of life is forever doomed.”

McArthur replied:

“I do unreservedly agree with the complete wisdom and statesmanship of your comments…(I am) deeply troubled by the sinister drama of our present chaos and confusion.”

Miller also wrote:

“Another four years of this monarchy (the Roosevelt administration) would destroy the rights of the common people…(You are needed) to destroy this monstrosity…which is engulfing the nation and destroying free enterprise and every right of the individual.”

McArthur replied that:

“I thank you for your scholarly letter…your description of conditions in the United States is a sober one indeed and is calculated to arouse the thoughtful
consideration of every true patriot…Out here we are doing what we can with what we have…I will be glad, however, when more substantial forces are placed at my disposal.” (Manchester 2008)

Other Roosevelt opponents are alleged to have gone even further in their attempts to recruit military officers to depose the President (Archer 2007). Retired Marine Corps General Smedley Butler testified that he had been approached by a group of businessmen to take over the Government of the United States and undo the New Deal. As a Senior Military Officer, the businessmen believed he would naturally be sympathetic to their plans. However, many contemporaries and historians have doubted whether this so-called ‘Business Plot’ was in fact real or whether it had been fabricated by Butler, by that time a committed left winger, to discredit Roosevelt’s opponents. Even if it were real there is little suggestion that it ever came close to being a genuine threat to the US system.

In fact, given that McArthur and others appeared genuinely to believe that Roosevelt was destroying the American way of life, the striking thing is that neither he nor anyone else in the US military seriously proposed undertaking a coup d’état to depose him.

The same is even truer for McArthur’s relations with Roosevelt’s successor, Harry Truman. Whereas Roosevelt enjoyed high favorability ratings and had the popular mandate of four election victories, Truman’s popularity was historically low by the time of his famous clash with McArthur over the conduct of the Korean War (Pearlmann 2008).

McArthur unquestionably overstepped the mark as a military officer by undermining US negotiations with China, publicly criticizing the President’s policies and openly corresponding with the Republican House Minority Leader to undermine Truman’s position. Consequently,

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13 Credulity Unlimited, New York Times, November 22nd 1934
Truman had McArthur removed from his position as Commander of US forces in Asia (Pearlmann 2008).

Instructively, according to Gallop polls and public response in the form of letters to Congress and newspapers, as well as public protests, a solid majority of the American public supported McArthur against Truman. McArthur returned to the United States and delivered an address to both houses of Congress critical of the Truman administration’s policies. He also mounted a speaking tour of various American cities delivering the same message (Pearlmann 2008).

Given this level of public support, the importance of the issue at hand and his personal and political disagreement with Truman, it would be hard to imagine an Argentinian or Brazilian version of McArthur would not have simply marched into the White House and ordered Truman out at gun point. Yet McArthur’s actual reaction was remarkably mild by comparison. He toyed with the idea of seeking the Republican nomination for President, but when this went to Dwight D Eisenhower, he essentially withdrew from public life (Pearlmann 2008).

In the extensive literature on the confrontation, in fact, there is no mention of McArthur actually plotting a violent seizure of power.

A similar situation arose more than forty years later when President Bill Clinton faced off against the Chairman of the Joint Chiefs of Staff Colin Powell over the issue of gays in the military. Although the issue was of lesser importance to national security than the Korean War, once again a popular Republican leaning General faced a civil-military relations crisis with an unpopular Democratic President.
Clinton’s popularity was far lower than Powell’s and on the issue of gays in the military he did not enjoy the support of the majority of the American public. Indeed, on the specific issue, Clinton faced opposition from within his own party, especially from the respected Democratic Senator, Sam Nunn (Herspring 2005). Moreover, Clinton was one of the most unpopular Presidents of modern times with military officers, due to a number of factors such as his avoidance of service in Vietnam, publicly expressed dislike of the military as a younger man and his seeming disrespect of military service (Herspring 2005). A two star Air Force General spoke for many when he described the President as a ‘gay-loving, pot-smoking, draft dodging womanizer’ at an air force banquet in the Netherlands. At the Marine Corps command’s formal mess night in Quantico, Virginia, officers were warned not to make ‘any inappropriate remarks during the toast to the President of the United States’, which was ‘to the office, not the man’. Most of those present reportedly raised a glass but did not drink from it (Herspring 2005).

Again, in many countries, such an issue might well have been the trigger for a coup d’etat, replacing Clinton with Powell. Yet as with McArthur, biographies of Powell and accounts of the crisis contain no mention of even preliminary suggestions of a coup. Even within the fervently anti-Clinton world of conservative talk radio, no one took on the role of HA Gwynne in World War One Britain to urge that Powell act to depose the President.

The United States then has weathered numerous civil military crises in which a popular General faced an unpopular President with whom he had fundamental personal and political differences. The fact that a military coup was not even seriously contemplated at these junctures speaks to the stability of the US constitution. An American President knows that he faces effectively zero risk of violent deposition by his military officers even if these officers privately
loath his political agenda and/or him personally and enjoy far greater popularity with the public at large.

Of course, hostile officers can still damage the incumbent – by generating unfavorable publicity as Stanley McChrylst did\textsuperscript{14}, helping Congressional opponents like McArthur (Pearlmann 2008) or retiring and running against the President oneself like George B McLellan\textsuperscript{15}. Yet one need only consider the fate suffered by civilian leaders at the hands of the military in other countries such as Chile’s Salvador Allende\textsuperscript{16} or Pakistan’s Zulfiqar Ali Bhutto (Niyazi 1992) to realize that the civil military problems an American President faces are qualitatively different from those facing leaders who might be overthrown by their Generals and potentially killed. Consequently, although it would be untrue to say American Presidents have no incentive to interfere in military recruitment and promotions, the incentive for them is far lower than for leaders of coup vulnerable countries such as Iraq.

Of course, there are many alternative explanations besides longevity for this coup invulnerability. The most obvious is that the American military has successfully inculcated in its officers a normative belief in civilian rule and value for the Constitution, regardless of one’s current disagreements with the party in power. The American right’s reverence for the Constitution and belief in individual freedom, moreover, might be thought difficult to square with the concept of a military takeover, even if they believe that these values are being threatened by the incumbent President.

\textsuperscript{14} http://www.rollingstone.com/politics/news/the-runaway-general-20100622
\textsuperscript{15} http://www.presidency.ucsb.edu/showelection.php?year=1864
\textsuperscript{16} Salvador Allende: la revolucion desarmada, Catrl Etcheverri
Within the US case itself, it is hard to distinguish the normative from the longevity explanation. Nonetheless, the normative explanation does leave open the question of why all democratic states are not able to instill these beliefs in their officer corps. Many have failed.

Second, one might point out that the Presidential system itself serves as a useful safety valve for ambitious Generals. It is relatively easy for a successful and popular General with high name recognition to seek the nomination of one of the two parties without the need for a lengthy apprenticeship in Congress or as a state governor. Consequently, such a General knows that if he simply bides his time, retires and runs for President himself, he can depose the despised incumbent legally and constitutionally in a few years. This, of course, was McLellan’s plan. McArthur also frequently floated the idea of a Presidential run (Manchester 2008), something which others also urged on Colin Powell (deYoung 2006).

The problem with this explanation is first that none of these Generals who fell out with their Commander in Chief actually did gain the Presidency in this manner. McLellan lost to Lincoln and accepted his defeat. McArthur and Powell did not even run. Those Generals who did gain the Presidency- Eisenhower and Ulysses S Grant for instance- did not run because of a disagreement with the previous incumbent.

Moreover, this would not explain why Latin American countries which adopted American style Presidential systems have been plagued by coups for most of their independent history\(^\text{17}\), whereas many parliamentary democracies on the Westminster model have been as coup free as the United States.

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\(^{17}\) Brazil and Argentina, for instance, copied ‘huge sections’ of their constitutions from the United States in the 19\(^{th}\) Century, yet both have suffered multiple coups. By contrast, Australia, Canada and New Zealand
In fact, the longevity explanation for the United States’ coup invulnerability is supported by much expert analysis. For one thing, the very earliest years of the Republic were marked by a suspicion on the part of civilian politicians of the standing Army. The Army was kept small and many safeguards were kept in place precisely because American civilian leaders did not believe that a military takeover was unforeseeable. It is instructive that the closest the US has ever come to a military coup was in the years immediately following the Revolutionary War, when a faction of officers organized and considered marching on Congress only to be personally dissuaded by George Washington himself in a meeting in Newburgh, New York.

By the late twentieth century, by contrast, centuries of civilian rule have created such strong mutual expectations of deference to the civil power that a prospective coup leader would have to rate the chances of his being obeyed by the military or civil bureaucracy as being close to zero. In a discussion sponsored by Harper’s Magazine, revealingly titled “Military thinkers discuss the unthinkable”, Edward Luttwak, Charles Dunlap and Andrew Bacevich outlined the thought processes behind any prospective coup leader in the United States today:

“BILL WASIK: Let us begin with the most straightforward approach. Would it be possible for a renegade group of officers, or the officer corps as a whole, to simply plot and carry out a coup d’etat in the United States?

EDWARD LUTTWAK: If somebody asked me to plan such a coup, I wouldn’t take on the assignment.
CHARLES DUNLAP: I wouldn’t either (laughs)

LUTTWAK: I’ve done it for other countries, but it wouldn’t work here. You could go down the list and take over this headquarters, that headquarters, the White House, the Defense Department, the press, the television, the radio and so on. You could arrest all the leaders, detain or kill off all their families. And you would have accomplished nothing.

ANDREW BACEVICH: That’s right. What are you going to seize that, having seized, gives you control of the country?

LUTTWAK: You could sit in the office of the Secretary for Defense, and the first place where you wouldn’t be obeyed would be inside your own office. Or if you were obeyed in the office, then people in the rest of the Pentagon wouldn’t. If everybody in the Pentagon followed orders, then people out in the military bases wouldn’t. If they did, as well, American citizens still would not accept your legitimacy.”

As Luttwak points out, even a leader who would like to mount a military coup could not expect to have his orders obeyed and would therefore almost certainly fail, being left to face the punishment for usurping the civil power. As Dunlap points out later:

“Civilian control of the military is too deeply ingrained in the armed forces.”

In short, then, a US President is so safe in his position relative to the military that he has no need to engage in the kind of coup proofing policies in officer selection and promotion which characterized coup trap states such as Iraq. Although the normative explanation cannot be wholly ruled out, a good part of the reason why is simply the age of the American political order, creating mutual expectations of continued civilian rule such that even an officer who privately might wish to depose the President knows that he has zero chance of success. Knowing this, he will not even discuss the idea of a coup with close associates, which in turn reinforces the belief

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20 http://www.harpers.org/archive/2006/04/0080995
21 http://www.harpers.org/archive/2006/04/0080995
that a coup is unthinkable. The invulnerability of the US to a coup is therefore stable, strong and self-reinforcing.

Consequently, the recruitment, education, training and promotion systems of the US military are free of the kind of political restrictions which dogged those of its Iraqi adversary.

Entry into the US officer corps is principally through two routes – the US Military Academy at West Point and the Reserve Officer Training Corps (ROTC)\(^\text{22}\). The latter option is available to all college students at institutions which have an ROTC establishment and provides 60% of the US Army’s incoming Second Lieutenants\(^\text{23}\). In contrast to the Saddam-era Iraqi Army’s requirements that an officer candidate be a committed Ba’athist with no family or other links to opposition movements, the ROTC makes no demands on the political leanings of its entrants. ROTC candidates need only be US citizens between the ages of 17 and 26, with a high school GPA of at least 2.5, an SAT score of at least 920, a high school diploma and meet Army fitness requirements\(^\text{24}\). The absence from many elite colleges of the ROTC scheme does put some limits on the pool of talent from which the ROTC can be drawn\(^\text{25}\). Moreover, even in universities which do have an ROTC program, there is clearly some self-selection at work whereby more liberal students are more reluctant to join the program than their conservative leaning colleagues\(^\text{26}\). These, however, are very small restrictions on the talent pool by comparison with the extensive and painstaking attempts of Saddam’s Ba’athist hierarchy to

\(^{22}\) http://www.goarmy.com/careers-and-jobs/become-an-officer.html
\(^{23}\) http://www.goarmy.com/rotc/legacy-and-value.html
\(^{24}\) http://www.goarmy.com/rotc/college-students/four-year-scholarships.html
\(^{26}\) http://www.dailykos.com/story/2008/06/26/542635/-JROTC-Why-Progressives-should-support-the-program
exclude from the officer corps any individuals even suspected of possibly being opposed to the regime.

The second route into the officer corps - West Point - is controlled by a very uniquely American system of nomination which could, potentially, leave itself open to political abuse. Entrants to the Academy must, in addition to meeting the academic and physical entry standards, be nominated for a position by a Senator or Representative from their home state or other political figure such as the Vice President or Secretary of the Army\(^\text{27}\).

This system does, at first blush, appear to open the door to political favoritism which may exclude qualified candidates from the military academy. Congressmen may use nominations to West Point for the children of favored donors, for instance, or to penalize families who are active in support of their opponents. Surprisingly little work exists on the extent of political favoritism in West Point nominations.

Nonetheless, three considerations suggest that the West Point nomination system does not introduce much in the way of politically motivated restrictions into the officer corps.

First, clear electoral incentives exist on the part of challengers in Congressional elections to expose any favoritism in the nominations process. In spite of this, the issue of using West Point nominations as a form of political patronage has rarely if ever arisen in a modern US Congressional election.

\(^{27}\) http://admissions.usma.edu/cong_nominations.html
Second, it is quite possible that one’s Senator and Representative are from different parties, so that if one cannot secure a nomination from one source, then the other could still be available.

Third, even if political favoritism barred one’s entry to West Point, one still of course has the ROTC route to join the officer corps, something which is now the point of entry for the majority of incoming officers anyway\(^{28}\).

In short, then, although the West Point nomination system introduces a degree of politicization into the officer selection process which is unusual in Western democracies, it cannot remotely be compared to the severe political restrictions in coup vulnerable states such as Iraq. For one, the nomination process is in the hands of the legislative rather than the executive branch, and would therefore be of very limited use in preventing a coup against the President, if that were its purpose. Moreover, there is very little evidence that Members of Congress use the power given to them in the nomination process to exclude political opponents. Even if they did, many other options are open to a talented potential officer who happens to be unable for political reasons to secure a nomination from his Representative or Senator.

Both promotion and advancement through the medium to higher levels of the US Army’s officer education system are marked by a lower degree of political interference than in coup vulnerable states. The need for Presidential and Congressional approval ensures that the US promotions process is not free entirely of politicization, but merit is nonetheless the most important criterion.

\(^{28}\) http://prhome.defense.gov/poprep2004/officers/commission.html
The top 50% of officers are identified by a central selection office and nominated to attend the Command and General Staff College in Fort Leavenworth, Kansas, with the rest receiving a non-resident equivalent course\(^29\). This is the US Army’s mid-level educational facility. Mid-career entrants to the next level, the elite School of Advanced Military Studies must have already passed through Fort Leavenworth’s Staff College, have good recommendations from superiors, pass a written and oral entrance exam and an interview conducted by a special Army SAMS selection board\(^30\). Political views are obviously not considered and direct Presidential or Congressional interference in entrance to these institutions is unknown.

The highest level of military education in the United States is the US Army War College in Carlisle, Pennsylvania. This is designed to produce the US Army’s most Senior Officers-Generals. Entrants to the War College have approximately twenty years’ experience and have commanded up to battalion level (Stiehm 2002). Entrance to Carlisle is by invitation by one’s professional superiors and is highly selective – only 4% of eligible officers are invited to join (Stiehm 2002).

At the very highest level of flag officer- Brigadier General and above- politics re-enters the US Army’s promotion system. Flag officers must be nominated, not by professional superiors, but directly by the President (at least in theory). They must then be confirmed by the Senate. However, the fact that the process of acceptance is routine, with rejections very rare even when different parties control the White House and the Senate, shows that military competence rather

\(^29\) http://www.almc.army.mil/alog/issues/MayJun04/alog_education.htm
\(^30\) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA530174
than political loyalty is the key criterion\textsuperscript{31}. Even if the President wished to appoint a political lackey to a senior position, the very prospect of Senate opposition could serve as a deterrent.

The modern US Army’s officer recruitment, education and promotion system, although subject to some legally mandated political influence, is therefore clearly based on military merit as opposed to political loyalty. Given the constitutional stability of the United States which all but guarantees no President need worry about a coup regardless of how poor his relations are with his Senior Officers, this is hardly surprising. The consequences of this meritocratic promotion system, moreover, are precisely as one would expect – a high level of effort for promotion breeding the acquisition of military skills.

These high levels of diligence begin even before entry to the US Military Academy at West Point. Even in high school before entrance, West Point students have higher SAT scores on average than other aspiring University students. For instance, in the graduating classes of 1992-1998 analyzed by the economist David S Lyle, the \textit{minimum} SAT score was 1149.1 compared with a national \textit{average} in 1994 of 1003\textsuperscript{32}. While these scores do not quite compare with the most elite schools – for instance, Harvard’s class of 1995 scored an average of 1390, Yale 1350 and Princeton 1340\textsuperscript{33} - this still makes West Point a very selective institution in academic terms even though academics are not its primary purpose. In fact, US News and World Report’s University Rankings consistently rank West Point as the country’s top ‘public liberal arts college’\textsuperscript{34}.

Once in West Point, students are subjected to a rigorous regime of work and study designed to develop them intellectually, physically and in terms of intangibles such as leadership.

\textsuperscript{31} http://www.slate.com/articles/news_and_politics/explainer/2010/06/confirm_or_deny.html
\textsuperscript{32} http://professionals.collegeboard.com/data-reports-research/sat/cb-seniors-2010/tables
\textsuperscript{33} http://www.thecrimson.com/article/1993/5/7/report-discloses-sats-admit-rate-pa/
\textsuperscript{34} http://www.dean.usma.edu/
The biographers of West Point alumn General David Petreus, David Cloud and Greg Jaffe, noted that “cadets were ranked, graded and assessed every day of their four years.” Students are put together in ‘companies’ to which they are randomly assigned and which constitute their social group for the remainder of their time at West Point. They are expected to rise at 6am and spend the bulk of their day working until 11.30 in the evening. The tests to which they are subjected cover, in addition to military training and the academic subjects one would find in a civilian university, interpersonal and leadership skills under the rubric of military development (MD) grades. Military development consists of 12 dimensions – duty motivation, military bearing, teamwork, influencing others, consideration for others, professional ethics, planning and organizing, delegating, supervising, developing subordinates, decision making and oral and written communication. The appropriateness and correct measurement of these variables is frequently reviewed by specialist military psychologists (Bartone and Snook 2004).

At Fort Leavenworth, the atmosphere is similarly rigorous, although in comparison to the German Kriegsakademie, the institution has historically been less prepared to fail students in order to motivate them to put in greater effort (Nenninger 1978).

Robert D Kaplan described the atmosphere at the Fort Leavenworth of the late 1990s, where many of the mid- to high-level commanders of the US Army in the wars in Afghanistan and Iraq were educated, described one course in the following terms:

“Suit’s course simulates tank battles for Lieutenant-Colonels who will have 300-400 vehicles and 5000 soldiers to lead against similar forces in a ‘combat window’ where all will be decided in fifteen to thirty minutes. “Each of these engagements is bigger and faster than Waterloo”, Colonel Suit explained. “Commanding an armored brigade isn’t brain surgery, it’s much tougher”…. As Suit ran me through the onscreen battle,
displaying all the vehicles and the terrain as combat progressed and asking me what I
would do at each stage, I felt as if I were playing multidimensional chess with thirty
seconds allowed between moves. More and more information must be processed with
less and less time to think.” (Kaplan 1996)

As befits an institution preparing officers to move into staff positions and potentially
even more senior strategic leadership roles, Fort Leavenworth students study military theory and
history intensively. As Kaplan notes:

“At Leavenworth men and women in their late twenties through early thirties
devour ancient history and related subjects…”

“The eclectic reading at Leavenworth includes military writers such as Antoine
Henri Jomini, Karl von Clausewitz and Frederick the Great. Because many officers are
late bloomers intellectually, they attack books with an urgency unknown on an Ivy
League campus. During the Cold War the Foreign Service fancied itself the elite
government bureaucracy. The military may yet claim that mantle for the new age. Army
captains and majors, to say nothing of the higher ranks, evince a historical sensibility that
could be declining in the Foreign Service and that the media, with notable exceptions,
lack. ‘The media’, one major sneers, ‘are all about now, now, now, with all the depth of a
credit card’. To mention Haiti here is to elicit a detailed report on that country’s troubles
since independence from France in 1804. Mention Rwanda and you hear about ethnic
violence from the late 1950s through the 1970s. The same with the Balkans. Whenever,
in the course of various lectures I delivered here, I brought up US intervention in Bosnia,
my own writings (and those of others) about that region’s fractious history were thrown
back at me. Here historical precedent rules. Officers study previous battles and
interventions, and the political circumstances surrounding them, the way law students
study torts. The underlying message is that knowledge of the past helps foresight, and
those with foresight accrue power.” (Kaplan 1996)

The final stage of the military education process – attendance at the Army War College in
Carlisle – involves a similarly rigorous routine. The USAWC course is designed to be similar to a
civilian Master’s Degree, but must be completed in eight months rather than the year or two years
required by civilian graduate school. The College’s Faculty refer to four ‘zones’ in which
students could potentially be – ‘yawn’, ‘comfort’, ‘challenge’ and ‘panic’ – with the goal being to
keep them in the ‘challenge’ zone throughout their experience at Carlisle. Students are expected to devote far more time to their studies than would be the case in even a prestigious civilian Master’s Program. Seminars meet Monday, Wednesday and Friday morning. Tuesday and Thursday mornings are for speakers. Monday and Wednesday afternoons are for required complementary programs, Tuesday and Thursday afternoons are course director’s time and Friday afternoon is not ‘time off’. Time is even scheduled for individual study (Stiehm 2002).

The peacetime curriculum at Carlisle is designed to be appropriate for military officers aiming for the highest commands in which they will be required to turn their minds to strategic rather than operational or tactical matters. Courses are offered in critical thinking as well as civil military relations, grand strategy, political science and ethics. The aim is to get alumni to ‘expect the unexpected and to perform in an environment that is ‘volatile, uncertain, complex and ambiguous’ (Stiehm 2002).

This is not to say that the American professional military education system (or PME as it is known) is without its critics. In fact, many individuals with a deep knowledge of the system are especially critical of the War Colleges in particular. Former War College commandant General Robert H Scales, Professor Joan Johnson-Freeze and respected Defense journalist Thomas Ricks have pointed to numerous flaws in the system, with Ricks even calling for the College’s abolition (Ricks 2010). These critics have pointed out, among other things, that officers see the War College as ‘time off’ from active service, have little concern about working there given that the College is loath to expel previously high performing officers for failing courses and are not encouraged to think in a creative and flexible manner (Ricks, Scales, Johnson-Freeze 2012). Johnson-Freeze also points out that the uncongenial terms of service for academics, including
opaque promotion systems, lack of tenure and uncertain academic freedom, make it hard for the
College to attract the best civilian instructors (Johnson-Freeze 2012).

While there is undoubtedly much value in these critiques, the United States’ professional
military education system must be seen as a whole and in comparison to other systems. For one
thing, the majority of the critiques focus on the very highest level of military education – the War
Colleges. The lower levels, where the Army’s tactical and operational leaders are formed, are
spared the worst of the critique. SAMS, the American equivalent of the traditional German
Kriegsakademie, for instance, emerges rather well from the PME debate. General Scales, for
instance, refers to it as ‘the bright spot in American officer education’ (Scales 2012). Given that
SAMS operates on rigidly selective criteria, as the German General Staff did, this is hardly
surprising. As pointed out above, SAMS alumni form a key part of the Army’s upper level
‘brains’ and were responsible, for instance, for the plan behind Operation Desert Storm (Shamir
2011).

Moreover, the critiques by Scales, Ricks, Johnson-Freeze and others must be viewed in
comparative perspective. Some of the harshest criticism on their part is reserved for the post-9/11
era (Ricks, Scales and Johnson-Freeze 2012). By comparison with Iraq, of course, many of the
criticisms of the War Colleges lose some of their power. Unlike the al-Bakr University for Higher
Military Studies, the US Army War College does not accept the President’s relatives for political
favors but rather officers who have distinguished themselves in their prior careers and are marked
out for future advancement. Moreover, the very fact that the US PME system can play host to
such a debate over its own operational efficiency is indicative – there is no record of such a
debate being had, at least publicly, in Saddam Hussein’s Iraq.
In short, then, the US Army’s officer education system at most levels elicits a very high degree of effort from its students in order to help with their own advancement into the higher ranks of the officer corps. This is especially apparent by comparison with more politicized systems such as we have seen with the Iraqi Republican Guard. The skills acquired through their own efforts at West Point, through the ROTC and later at Fort Leavenworth and Carlisle are one of the major reasons for which the US Army enjoyed such a solid qualitative edge over the Iraqi military in 1990 and 2003. However, as we have seen, the professionalism of the Iraqi system has been underestimated and underappreciated, even if it was not up to US standards. A full explanation for US superiority over the Iraqis must also look at the education and training systems at the NCO level, and how this was influenced by the US’ achievement of full literacy.

5.4.2 The Enlisted to NCO Funnel

As noted in the introduction to this chapter, the United States had already achieved near universal literacy by the time of World War One. Although its literacy rate was slightly lower than those of the most advanced Western European countries due to immigration and a lack of investment in the education of African-Americans, these deficits had been remedied by the 1950s. Cross national databases such as the UN’s Human Development Report thus credit the modern United States with universal literacy (Banks 2011). Modern day news stories documenting continued illiteracy amongst the poorest Americans are based on a more expansive definition of the term ‘literacy’ than that used in cross-national and cross-temporal databases such as Banks. The National Center for Educational Statistics’ studies on literacy looked beyond the basic abilities to read and write which have traditionally constituted the definition of literacy and instead examined American adults’ ability to use reading and writing to carry out certain daily
tasks. Thus individuals the NCES has defined as ‘functionally illiterate’ would have been considered literate had they been tested by the World Bank in Nigeria or by the US Government itself in 1910 (National Center for Education Statistics 1993). While ‘functional literacy’ as defined by bodies such as the NCES may be a better measure of the needs of an Army, statistics on this variable are available only for a small set of modern, developed democracies. Moreover, such studies as have been done on the matter suggest that the traditional, minimalist definition of literacy used in time series cross sectional databases overestimates the degree of literacy consistently across time and place and therefore does not bias statistical results.

In a country such as the United States, then, which has or approaches universal literacy, the employment options for an individual who can read and write but has little or no other educational qualifications are very limited. Conversely, the economic penalty for those whose reading skills are very low is stiff – those Americans surveyed by the NCES who exhibited the lowest level of reading proficiency were far more likely to be unemployed, on food stamps or earn low wages if employed (National Center for Education Statistics 1993). Although the incentive for American students to acquire good reading skills is lower than that of some other developed democracies, it is still higher than in states such as Iraq where so many of one’s labor market competitors are illiterate that there is little penalty if one is illiterate also.

In fact, over the past few decades, not only the illiterate but also those with only a lower level of education have seen their earnings stagnate in relative terms. Although economists debate whether this reflects government policy or exogenous technological change, the gap between the earnings of those with a high school education or less and those with a Bachelor’s degree or more
has increased substantially in recent years, as the chart drawn from the US Census Bureau indicates\(^{36}\).

![Average US Male Earnings](image)

**Figure 26: Average US male earnings since 1991 by education level**

Thus the US Army benefits from the fact that individuals with the basic literacy necessary for a military education have seen their earnings stagnate in recent decades. Although charts of average earnings for US males with only a high school education show military pay lagging behind, military service has become relatively more attractive as unskilled wages have scarcely increased\(^{37}\). A RAND study issued in 2006 showed that growth in ‘regular military compensation’ (RMC) for enlisted men had been outpacing the growth in civilian earnings for similarly qualified individuals since at least the early 1980s and was projected to continue in the future, as the graphic below illustrates (Hosek and Sharp 2006).


Military service is all the more appealing for individuals with no more than a high school education given that the US Army has increasingly used the provision of free civilian education to prepare troops for post-service employment, thereby enhancing soldiers’ lifelong earnings, as an incentive for recruitment (Cohn 2007). Consequently, the US has been able to insist upon relatively high standards of education at the point of entry- even for enlisted men. The modern US Army in fact requires a high school diploma as a minimum condition of entry even for
Privates – although some exemptions may be made for individuals with a high school diploma substitute the GED (General Education Diploma), Army recruiters make clear that some service branches may limit their opportunities for further advancement\textsuperscript{38}. By contrast, the Iraqi Army had no literacy or educational requirement for its enlisted men and required only an elementary school certificate for senior NCOs (Woods 2011)– something which did not guarantee that they were literate given the poor performance of Iraqi elementary schooling under Saddam.

Quite why these strict educational requirements benefit the US Army’s destructivity – especially in the NCO Corps – can be seen in the demands the specifically military education provided in the NCOES makes of American soldiers’ reading competency. While many of the requirements for promotion into and within the US Army NCO corps are strictly physical and/or could be acquired through verbal communication alone, acquiring and transmitting knowledge through the written word is also essential. For instance, the US Army’s in-house NCO Journal recommends that Sergeants and Staff-Sergeants (grades E5 and E6) amass 602 promotion points for entry into the higher levels of Sergeant First Class or Master Sergeant. Of these points, a significant number can be earned through written correspondence courses in Military Occupational Specialties – five hours of correspondence course per promotion point (Olson 1997).

While many of these manuals are not available to individuals outside of the military, some recent NCO manuals for the US Army are in the public domain. Qualitative and quantitative analysis of the content of these manuals demonstrates why a good degree of basic literacy is essential in order to acquire the knowledge contained in them. A 1993 Department of

\textsuperscript{38} http://www.todaysmilitary.com/before-serving-in-the-military/military-entrance-requirements?campaign_id=SEM2012:on:google:enlistment_requirements-us_military_requirements:broad
the Army Pamphlet on ‘Small Unit Safety Officer/NCO Guide’, for instance, is, as its title suggests, designed to be read by a Senior NCO or Junior Officer. The following passage should give the reader a sense of the linguistic competency required to understand it:

“Where to begin

Request a briefing with your commander to obtain his guidance for your part in the safety program. This meeting will serve as the basis for subsequent meetings and should set the tone for your role as safety officer/NCO.

Request training from the installation or supporting safety office, and arrange for participation in a unit safety officer/NCO course. Ask questions, identify support resources (promotional items, training materials) and establish a good point of contact in the safety office.

Review your unit’s overall mission. What are the key elements essential for mission success? What personnel, items of equipment, facilities, tools or supplies are important for mission success? You will want to emphasize accident prevention in all unit activities. For example, a unit should stress that personnel must perform to standards and follow established procedures in order to minimize accidents. Next, determine what hazards exist. Use checklists to assist you in identifying hazards. Then, focus on the unit activities and missions that are immediately ahead…Keep your focus on these areas as you collect the needed information. The references in Appendix A will help you identify the standards that must be followed to ensure safe unit operations.

Review your unit SOPs. Using the references mentioned above, evaluate how effectively safety standards have been integrated into the SOPs. Talk to the key personnel in your unit and get their opinions regarding the effectiveness of the unit safety program, and any potential accident areas. Your objectives are to detect the likelihood of an accident and minimize the chance that one will occur.”

In the 1970s, the Flesch and Flesch-Kincaid grade level scores were developed – significantly under the aegis of the US Defense Department – to provide a quantitative measure of the difficulty of a given text (Kincaid 1975). The Flesch measure scores texts between 0 and 100 with lower scores indicating greater difficulty of comprehension – for instance, scores of 60-

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39 ‘Small Unit Safety Officer/NCO Guide’, Department of the Army Pamphlet, September 1993, 2-1/2-2
70 indicate that a text can be understood by a high school student, while scores below 30 would require a Bachelor’s Degree. In real world applications, the Flesch measure has given Time Magazine a score of 52 and the Harvard Law Review scores in the low 30s (Dietrich and Dhamija 2007). The Flesch-Kincaid grade level score simply gives the level of education (in US terminology) necessary to understand the text.

In these terms, the above text scores just over 40 on the Flesch score – somewhere in between Time and the HLR – and would require at least a 12th Grade education to be understood by the reader. Even an Iraqi NCO who had a primary school certificate would be quite unable to understand an Arabic equivalent of the above text, even if he could read some words of his native language and sign his own name.

Unfortunately, neither the CRRC nor any other Western source currently possesses any Saddam-era Iraqi NCO manuals for comparison. Such manuals did exist, but as of the time of writing they have been lost to posterity40. The manuals the CRRC does possess are all at Brigade level and thus intended for mid to senior level officers. I applied the Flesch algorithm to the English translation of these documents, yielding a score of just over 30 – almost indistinguishable from comparable US manuals41. This supports the contention that Iraq’s literacy problem lay at the NCO rather than the officer corps level – the legacy of an education policy targeted at favoring the elite over the majority of the population.

40 Interview by the author with Major General Aladdin Hussein Makki Khamas
The US Army of 1990 and 2003, by contrast, could be assured that its NCO corps had benefited from an intensive military specific education. Through correspondence and leadership courses, even NCOs who had had no prior experience of combat could benefit from a store of military knowledge accumulated by others. This would allow US NCOs to devise solutions to novel problems which could not be observed or directed by superiors. Their superiors, in turn, could therefore happily devolve power to these subordinates safe in the knowledge that they would know how to react.

The US Army’s system of providing NCOs with a high level of military education and then devolving power to them first bore fruit in the Gulf War of 1991. The official history of the US Army NCO Corps – critical of the corps at other points in its history – stated:

“The Army’s NCOs covered themselves with glory during the 100 hour ground war.” (Hogan, Fisch and Wright 2009)

More specifically, many of the small unit actions to which analysts such as Biddle and others credit the stunning American success were actually directed by Senior NCOs rather than by Junior Officers. US formations were too dispersed to allow for easy monitoring of small unit actions by members of the commissioned officer corps. Hogan, Fisch and Wright cite one particular armored platoon in the key battle over Objective NORFOLK, in which the Iraqi Republican Guard was decisively defeated.

“The M1A1 tank platoon sergeant pressed his head against his sight and braced for the recoil as his gunner shouted, ‘On the way!’ In an instant the green glow of his thermal sight splashed white, first with the heat of the 120-mm cannon’s discharge, then with the thermal signature of an Iraqi T-62 tank bursting into flames at 300 meters’ distance. His curt “Target, cease fire” barely stopped the gunner from sending another round into the already burning target; the loader already had another round in the tube. Grasping the tank commander’s override control, the platoon sergeant quickly swiveled
the turret to the right to affirm that his wingman’s tank had destroyed its target as well. Two T-62s had literally popped out of the ground in front of them, backing out of revetments that had hidden them from view. Fortunately, the Iraqis had oriented their revetments to the south in the direction of an expected American attack up the Wadi al Batin, whereas the American tankers actually had approached from the west after a deep left hook. It took the Iraqis a few seconds of exposure to reposition their tanks to face this attack from an unexpected direction. A few seconds was all it took for superbly trained American gunners to find their marks….

“That night every soldier in the battalion was grateful that their platoon sergeants had been strict with respect to maintenance and gunnery…Drawing on years of training and experience, the sergeants had enforced a rigorous routine of maintenance checks and services every day during their preparations for war and at every pause during their inexorable advance.” (Hogan, Fisch and Wright 2009)

“Depending on the circumstances, either the platoon leader or the platoon sergeant would be speaking on the platoon net directing the actual employment of its vehicles while the other would use the company net to coordinate with and report to the company team leadership. Both men could monitor both nets. The radio traffic was a reassuring blend of familiar voices working through chaotic circumstances. Here was the flanking platoon sergeant reporting three T-62s they had encountered and destroyed; there was the motor sergeant reporting that the recovery NCO had pulled the platoon leader’s wingman out of an antitank ditch….All along that fifty-kilometer front of vehicles beetling purposefully forward through the wreckage of the battlefield, the voice of America was the voice of its NCOs.” (Hogan, Fisch and Wright 2009)

“On one occasion, two Iraqi T-55 tanks appeared immediately behind the fuel trucks in the combat trains of an armored task force. These rose in revetments within a hundred meters of the task force’s command sergeant major (CSM), who had retraced the route of advance with three drivers armed with M16s to flush out what they thought was a single sniper. The CSM had seen green tracers – American tracers were red – and was concerned for the security of the fuel trucks. What followed became a confused melee as the tiny contingent was drawn first to one antitank guided missile (ATGM) position and then to another. The Iraqis revealed themselves by firing ATGMs, and the M16 marksmen cut them down. The ATGM positions featured bunkered larders of munitions; these the Americans methodically blew up with thermite grenades. At one bunker, the CSM met an Iraqi departing as he was entering and killed him at the muzzle of his .45 caliber pistol. When the T-55s rose up, the CSM clambered aboard the closest and tossed a thermite grenade into its hatch. The second T-55 was destroyed by fire from an unknown source. For a few moments the most critical action on NORFOLK was one
NCO and three soldiers fighting totally outnumbered in the dark.” (Hogan, Fisch and Wright 2009)

In short, then, the causal mechanism linking the US advantage of universal literacy to its superior fighting performance in Desert Storm is clear. Because all Americans are literate, and a substantial proportion have very high level reading skills, the US Army can easily recruit literate individuals. Those with the basics necessary for a sound military education do not have very high alternative options, precisely because these basics are so common amongst the US population. Consequently, the US Army is able to provide its NCO corps with a strong military-specific education which relies on transmitting accumulated military knowledge through written manuals and courses. This means that even US NCOs who had never before seen combat had the ability to think through unforeseen situations on the battlefield and respond appropriately. Knowing this, the US military could successfully devolve power to these lower levels and make the modern system work.

5.5 Conclusion

The case of the United States illustrates very well the weaknesses and strengths of many explanations of military effectiveness. While the recent record of the US Army appears to bear out the ‘democratic triumphalism’ thesis, a closer look at American performance further back in time against autocratic foes with a similar level of literacy suggests a very different picture. The US Army of World War Two struck its autocratic German enemies as slow-moving, unimaginative and poorly motivated. US victory in the war did not reflect a pound for pound advantage in destructivity over Nazi Germany but rather an overwhelming numerical and material superiority, especially in combination with America’s highly autocratic ally, the Soviet Union. Only following the reforms of the 1970s and 1980s – including the establishment of SAMS and
the NCOES – did the US Army gain a strong reputation for skill and decentralized war fighting. Ironically, however, many of these reforms were inspired by autocratic German models – hardly a shining advertisement for democratic triumphalism.

The trends in the US Army’s fighting effectiveness are also hard to square with a ‘needs’ based realist explanation of destructivity. For one, the United States has outfought- on a pound for pound basis – states such as Iraq whose geographical and strategic situation is far more vulnerable. To be sure, the increased Soviet threat following the end of détente did sponsor renewed interest in Auftragstaktik, the creation of SAMS and a renewed emphasis on recruiting high quality personnel through the provision of educational benefits for enlistment. Through these measures, the US Army hoped to boost its destructivity and thereby to compensate for its numerical disadvantage vis-à-vis the Red Army in Central Europe. Nonetheless, the US had had to face the Soviet conventional threat in Europe since the end of World War Two. The need for a stark qualitative edge against the USSR had existed since at least the end of the American nuclear monopoly at the start of the 1950s. Conversely, the institutions which underpinned American destructivity outlasted the end of the Cold War. Consequently, the US had a more skillful and motivated military in the apparently benign unipolar moment of 2000 than in the fraught and tense year of 1960 at the height of the Cold War. This is surely problematic for a realist, needs-based explanation of American fighting effectiveness.

Similarly, the American experience casts doubt on the apparent link between ethnic heterogeneity and low destructivity. In the years since World War Two, the US Army first was desegregated and then, as it moved towards an all-volunteer force, consisted of ever greater numbers of African Americans and Latinos alongside many other ethnic minorities. Yet rather
than degenerating into a fractious, poorly motivated force full of suspicious soldiers unwilling to trust comrades of different races, the US Army’s fighting men are more motivated than ever. Micro-level work based partly on the Army’s own research suggests that two mechanisms are at play. First, cooperation under fire can develop amongst soldiers even if they do not initially identify with one another or have much desire to socialize outside of a military context – ‘task cohesion’ in military parlance. Second, this rudimentary ‘task cohesion’ can in fact, over time, evolve into a closer set of bonds amongst men who may not have previously been prepared to trust people of other races. This can be seen in the low levels of residential segregation in US towns with a high military presence.

Here, of course, it may be objected that this is simply a function of ‘American exceptionalism’, what Stephen Walt called America’s ‘unusual melting pot history’ (Walt 2012). Yet this perspective both overestimates the degree to which inter-ethnic tensions have genuinely hampered the fighting performance of other states and underestimates the difficulties the United States itself has had in molding together disparate ethnic groups, both in the military and elsewhere. Evidence of the shared experience of military service providing a means of creating inter-ethnic cohesion is present even in the unlikeliest of cases – even the Austro-Hungarian Army of World War One was, according to some military historians, surprisingly good in forging a common sense of identity amongst different ethnic groups at the small unit level (Stone 1966). Conversely, the American experience of forging a common identity out of disparate ethnicities under fire looks far smoother in retrospect than it did at the time. As Costa’s work on the Union Army of the Civil War showed, even getting white Americans of different European origins to work together in small units was once a tricky undertaking. Yet by World War Two, this problem had receded into the history books. Similarly, many service chiefs did not believe that mixed
white/African American units would be combat effective prior to desegregation. Again, however, nowadays observers have become so accustomed to African Americans and whites fighting for each other that the earlier concerns of many contemporaries about the effects of military desegregation have almost been forgotten. Moreover, the modern day ethnic minorities who have been successfully integrated into the US Army are precisely those whom many observers have claimed to be most resistant to the influence of the American ‘melting pot’ – African Americans and Hispanics. In contrast to European immigrant nationalities, these two groups have enjoyed less upward mobility, suffered more discrimination and are more likely to score poorly on a number of socio-economic indicators such as the probability of being unemployed or in prison. In short, it is overblown to claim that the US Army’s experience in integrating different ethnic groups into a common fighting force is unique and not transferable. This would ignore the huge historical and contemporary problems the US Army has had to overcome in keeping the divisions in civilian American society out of the barrack room.

For the importance of coup invulnerability, on the other hand, the United States is a prime exemplar. The stable mutual expectations of civilian rule engendered by a constitution which has endured for over two hundred years are incredibly strong. Even Senior American Generals who loathed the incumbent President and enjoyed huge popular support did not even seriously contemplate the possibility of overthrowing him in a coup – as the example of McArthur illustrates vividly. As the discussion among Bacevich, Dunlap and others shows, any rogue General contemplating a ‘march on Washington’ would know well that his orders would not be obeyed and that he would simply be set up for arrest and court martial. Of course, as

examples from McClellan to McChrystal illustrate, Generals can inflict damage on Presidents in ways other than mounting coups. In turn, of course, this gives Presidents incentives to insure, ex ante that the Generals they appoint to senior positions will be less likely to engage in ‘shirking’ behavior. The point is that, because the damage Generals can do to Presidents is lower in the American system, so also are the incentives for political pre-screening. Compared to countries like Iraq under Saddam, political considerations therefore play little part in recruitment and promotion within the US Army.

As the theory chapter points out, however, there is nothing about the democratic nature of the US constitution that foreordains this outcome. The Founding Fathers were very concerned about the possibility of a military takeover, something which was in fact in the air at the time of the Newburgh conspiracy. Moreover, numerous Latin American nations adopted constitutions modeled on that of the United States following independence – yet coups early in their history prevented the establishment of mutual expectations of civilian rule and trapped them in over a century of subsequent coups.

Knowing, of course, that whatever things a General might do to damage him, a pronunciamento followed by a firing squad is not one of them, an American President can safely ignore political leanings in the recruitment and promotion of officers. ROTC candidates are not investigated by the local branch of the Democratic Party in case their cousin once criticized President Obama. Jeb Bush was not given an emergency command course by reluctant instructors at Fort Leavenworth and then dispatched to command the 3rd Infantry Division on the march on Baghdad. The result, of course, is an officer training system which gives every incentive to its alumni to master military specific skills in order to advance through the ranks.
Finally, however, America’s universal literacy is a key determinant of high US destructivity relative to states such as Iraq. More or less all American adults are literate in the sense of being able to read and write at a basic level. This basic competence, however, is no longer sufficient to ensure reasonable employment prospects in the modern US economy – as the wage gap between graduates and non-graduates shows. A high school diploma is becoming the bare minimum to get by in the United States, which means that the US Army can benefit from a pool of individuals with relatively poor outside options but who nevertheless have the basic reading abilities on which a system of NCO education can be built. Given this, the NCOES established in the early 1970s, which involves a substantial theoretical, written component, helped to lay the basis for the crushing US conventional victories in Desert Storm and Operation Iraqi Freedom.

The US thus enjoys a high level of destructivity. In the conclusion to this dissertation, I will attempt to compare it with its only potential great power conventional rival – China. The conclusion to this chapter may appear to strike a note of complacency about contemporary American fighting abilities, but this is not the intention. While the institutions of the NCOES, West Point, the ROTC, the Command and General Staff College and SAMS are very well designed to elicit a high degree of skill and motivation, problems could still lie ahead.

A major problem, of course, is post service employment. The Obama administration has rightly highlighted the difficulties many veterans, especially in the combat arms with fewer transferable skills, have had in finding employment. Since World War Two, the United States has done far better in solving this problem than early twentieth century Britain. As we saw in the British case, poor post service employment opportunities inhibit recruitment and retention, which
in turn lower the level of competition for promotions which drive up military skill levels. By providing free civilian educational opportunities to NCOs and officers, the US Army has done better than Edwardian Britain at recruiting and retaining high quality officers and NCOs in peacetime. For this reason, the United States has been able to build a more professional officer and NCO corps and has avoided the worst of the ‘gentlemanly amateurism’ which hampered British military skill. Nonetheless, the US system of post service employment still cannot be compared to the German *Zivilversorgungschein*, which not only helped but guaranteed good work for veterans on completion of their service. Consequently, although the US can attract enough good candidates into the officer and NCO corps, the doors are not beaten down with applicants as they were in the Kaiser’s Germany. While it obviously impossible to determine how the modern US Army would have performed, pound for pound, against the Wehrmacht, it is instructive to note that many military analysts believe the US still has not fully attained the skill levels demonstrated by the masters of ‘*Auftragstaktik*’. If the United States were faced, once again, with a conventional foe of a similar level of development but which had done a better job of taking care of veteran’s employment, America’s qualitative, pound for pound advantage may no longer be there.
6. Germany

“The huge throng of people wishing to join the Reichsheer makes it possible to maintain a policy of strict selection right at the start and to expect high physical and personal abilities from applicants right from the beginning…No one who wishes to be a soldier can just start studying overnight, rather he must prepare for his future profession for years”

Albert Benary – Unsere Reichswehr (Our Armed Forces), 1931

“A satisfactory system of finding civil employment (Zivilversorgung) will in the future continue to be an absolutely essential precondition for the recruitment and retention of an NCO corps satisfactory both in numbers and in quality”

Captain Ferdinand Freiherr von Ledebur- The History of the German NCO Corps, 1939

For a peerless example of initiative, consider the following incident. A group of elite airborne troops were glider-bound towards their target, a heavily fortified enemy border town. Unfortunately for the assault, the glider containing the assault leader- a Junior Officer- was forced to make an emergency landing some 100 kilometers from the objective. A replacement assault leader was found in the form of a senior NCO, but his glider was also forced to make an emergency landing some 60 kilometers from the target. The NCO commandeered a local vehicle and drove to his objective, bypassing the massed armored columns ready to make the assault once the objective was seized. When he arrived at the position, he found that it was impossible to take it due to a canal blocking access to the front entrance, which intelligence had failed to identify. On his own initiative, the NCO gathered his troops and discovered a way to outflank the fort, which was successfully taken with a loss to the enemy of 121 PoWs.

The Junior Officer was a First Lieutenant Rudolf Witzig and the NCO a Staff Sergeant Meier, both of the elite Fallschirmjaeger of Nazi Germany. The fortified town which they assaulted and for which Meier was awarded the Knight’s Cross of the Iron Cross by Adolf Hitler
himself, was Eben Emael in Belgium, and the success of the attack cleared the way for the beginning of the German blitzkrieg in Western Europe in 1940 (Widder 2002).

The existing military effectiveness literature would make a number of diverse predictions about the destructivity of the country these men served. Early twentieth century Germany enjoyed very high levels of human capital and had never been the subject of a military coup. Moreover, Germany was a state with few natural defensible frontiers located in the middle of one of the world’s toughest neighborhoods – Western Europe. Some political scientists and historians have even claimed that German culture was dominated by a collectivist ideology which made Germans more willing than some of their neighbors to sacrifice their own self-interest for the good of the nation. At the same time, however, Germany was not a democracy in either World War and was in fact far less democratic in World War Two than in World War One\(^1\). Crucially from the point of view of my theory, however, Germany benefited from a set of market conditions which were especially conducive to recruiting and training high quality military personnel. Germany had strong professional associations which were able to regulate entrance and produce nationally recognized qualification standards. Germany also had a traditionally large civilian bureaucracy to sponsor economic development. From all these factors, the following predictions are derived:

\[ H_A : \text{Democratic triumphalism. Germany should exhibit lower destructivity than its more democratic adversaries such as Britain, France and the United States in both World Wars. Its troops should have lower fighting motivation and should show less initiative, as this is not encouraged by the autocratic culture from which they come.} \]

\(^1\) (the Kaiserreich is given a Polity score of 4 in 1914, classifying it as a mixed regime but below the conventional threshold to be considered a democracy, while the Third Reich unsurprisingly scores a -9). http://www.systemicpeace.org/polity/polity4.html
$H_2$: Human capital. Germany’s higher levels of human capital should translate directly into greater destructivity. The educational levels of German officers and NCOs should be higher than those of other countries and this should lead directly to higher fighting effectiveness.

$H_3$: Coup Proofing. As Germany had not had a coup, its military should be no less destructive than other similar countries such as Britain.

$H_4$: Culture. Germany’s fighting effectiveness should result from a ‘collectivist’ culture which socializes German soldiers into sacrificing their own self-interest for the common good. This should be observable in the behavior of German officers and men and in what they say in situations where they do not have incentives to falsify their preferences.

$H_5$: Realism. Germany should fight with great effectiveness because its leaders realized the crucial importance of destructivity to state survival given their geographical position. This should show up, for instance, in greater spending on the part of the Germans on military pay and pensions relative to less vulnerable states.

$H_6$: Motivation. The motivation for German troops to fight with initiative should be provided by peer group esteem. Harsh negative incentives should be important in situations where the line between fighting and shirking is clear. In this type of situation, then, the German Army of World War Two should have been more effective than its counterpart in World War One, as it relied upon harsher levels of punishment.

$H_7$: The Funnel. The combination of high barriers to entry to comparable civilian professions and a large civilian state bureaucracy to absorb retired military personnel should lead
to high levels of recruitment into the German Army. This will increase the competition for promotions and places through skills acquisition and will in turn enhance destructivity.

6.1 Democratic Triumphantism

The consistently high fighting effectiveness of the autocratic German Army, and its high levels of initiative and skill, constitutes a major problem for those who believe in the thesis of democracies as ‘powerful pacifists’ (Lake 1992). In fairness, many have recognized the problem and attempted to address it. Reiter and Stam, for instance, correctly point out that there may be outliers in any theory and that events such as Germany’s blitzkrieg victory over France could simply be the exception that proves the rule (Reiter and Stam 2002). They also note that the German victory over France in 1940 bears some of the hallmarks of a random event – the Wehrmacht defeated the Allied Forces in part because it was able to bypass the strongest French divisions through the Ardennes forest. This in turn relied on French intelligence and strategic blunders which could, they imply, have easily have turned out differently and so would appear essentially random (Reiter and Stam 2002).

While it is hard to evaluate a counterfactual such as the one Reiter and Stam present, it would be mistaken to see the German Army’s high level of destructivity as simply one outlying observation, or to conclude that the German Army’s reputation for effectiveness derives only from the success of the Blitzkrieg against France in 1940. The historical impact of German military effectiveness – which arguably caused and certainly prolonged two world wars in which hundreds of millions perished and which left millions more to suffer under German rule – surely warrants interest in and of itself. Moreover, the Wehrmacht’s military effectiveness was shown not just in a one-off victory over France but was demonstrated across a series of campaigns in
World War Two, many against democratic Armies which democratic triumphalism would expect to be able to handily outfight it.

The Wehrmacht also expelled the British from France, Belgium and Norway in Western Europe, Greece in Southern Europe and held the British back in North Africa for two years in spite of a marked numerical and (sometimes) technological inferiority. For instance, for a large part of the North African campaign, the British used US-made Sherman and Lee Grant tanks which were superior in both range and armor to the German equivalent, the PKWIII. When the British finally managed to turn the tide in North Africa at the battle of El Alamein, they outnumbered the German forces almost 3:1 in men and over 4:1 in tanks, in spite of which they suffered a loss exchange ratio of 3 to 1 (Dupuy 1977). While many contemporary observers ascribed this performance to the abilities of the German commander in North Africa, Field Marshall Erwin Rommel, more perceptive observers such as the Australian war correspondent Alan Moorehead pointed out:

“Rommel was an abler general than any on the British side, and for this one reason – because the German Army was an abler Army than the British Army. Rommel was merely the expression of that abler Germany Army” (Hastings 2009)

When on the defensive against both the British and Americans, the German Army continued to offer stiff resistance through Italy and France. Indeed, the long delay in the Allied invasion of Europe partly reflected a fear on the part of the Allied Chiefs of Staff, and particularly Churchill, that the Allied Armies were notably inferior to the Germans in training and tactics and so needed more time in which the (autocratic) Red Army could grind down the Germans’ elite formations on the Eastern front. The eminent military historian David Fraser pointed out that:

“Any who contend with hindsight that with the amphibious resources available to them the Allies could have invaded France from Britain in 1943 should consider the
actual Normandy fighting in the summer of 1944 and ask themselves how it might have
gone had a much stronger German Army (1943/1944 was a terrible year for the
Wehrmacht in Russia) been able to reinforce the Western from the Eastern front far more
powerfully than in fact occurred” (Keegan 1991).

Indeed, between the invasion of the Soviet Union in 1941 and D-Day, the Wehrmacht
lost 743,112 in the initial invasion including the Battle for Moscow (Cooper 1978), 280,000 men
at Stalingrad (Cooper 1978), a further 200,000 at Kursk (Friese 1979) to the Red Army. By the
time of D-Day, Germany had 850,000 men (approximately the same as in each one of the three
Army Groups facing the Soviets on the Eastern front (Friese 1979)) in France of whom 60,000
were deserters from the Soviet military who had re-enlisted in the German Army and a significant
number of new, inexperienced, younger recruits (Cooper 1978).

Post-war quantitative studies of the conflict confirm the impression given by these
numbers and quotations. The US Army’s Historical Evaluation and Research Organization found
that the Germans enjoyed a combat effectiveness of 23% above the Western Allies over the
course of World War Two (Dupuy 1978).

Nor in fact does the autocratic German Army’s reputation for effectiveness date back
solely to World War Two. The German Army of World War One inflicted severe reverses on the
other greatest military power in Europe – democratic France – and the British Empire, while
simultaneously fighting and ultimately overcoming Europe’s most populous nation Russia. Only
when the full might of the British Empire, France and the United States was brought to bear on
Germany did the German Army finally fold. As Winston Churchill noted:

“For four years Germany fought and defied the five continents of the world by
land and sea and air. The German Armies upheld her tottering confederates, intervened in
every theater of the war with success, stood everywhere on conquered territory and
inflicted on their enemies more than twice the bloodshed they suffered themselves. To
break their strength and science and to curb their fury it was necessary to bring all the
greatest nations of mankind into the field against them. Overwhelming populations, unlimited resources, measureless sacrifice, the sea blockade, could not prevail for fifty months. Small states were trampled down in the struggle; a mighty empire was battered into unrecognizable fragments; and nearly twenty million men perished or shed their blood before the sword was wrested from that terrible hand. Surely, Germans, for history it is enough” (Mann 1978).

The German Army of World War One is likewise credited by HERO with a favorable combat effectiveness relative to the Western Democracies. The Heer achieved a ‘score effectiveness’ rating (casualties inflicted per capita weighted by operational advantage) 54% greater than the French Army and 45% greater than the British (Dupuy 1978). Niall Ferguson supports this conclusion, further pointing out that the Central Powers killed 35% more men than they lost in the war, and that it cost them only $11,345 to kill an Allied soldier, versus $36,485 per soldier of the Central Powers killed (Ferguson 1999).

Indeed, the sheer numbers do not give a full idea of the true impact of the Germans in World War One. In fact, the Germans are credited by authorities such as Stephen Biddle (Biddle 2004) and John Gooch (Samuels 1995) with devising the set of innovations which created modern war – the ‘modern system’. NATO, for instance, based its tactical plans for repulsing a potential Soviet invasion of Western Europe on those of the Wehrmacht and Waffen-SS in Normandy (Ripley 2004). These innovations derived from the German tactical doctrine of ‘Auftragstaktik’ (mission oriented tactics), which involves dispersed formations fighting in small groups and places a large amount of reliance on the initiative of lower level commanders as exemplified by Sgt Meier and Lt. Witzig.

6.2 Human Capital
It is very tempting to conclude that human capital provides the key factor behind German military effectiveness. Germany’s high levels of education are well known and date back to long before the First World War (Vincent 2000). Moreover, Germany’s high productivity in the civilian business sphere, dating back to the late nineteenth century, is frequently attributed to this high level of educational attainment. Moreover, although standardized international comparisons were not available at the time, most observers would have agreed that the mean level of education in Germany in the early twentieth century was some degree higher than in the United States, Britain or France and far higher than in Imperial Russia or later the Soviet Union (Vincent 2000). This also appears to track, very closely, the difference in score effectiveness ratings between Germany and its enemies—Germany does a little better relative to the Western powers in education and has a slightly higher score effectiveness rating but it does much better relative to Russia on both counts. Attributing German military effectiveness to the high standard of German education is at least implicit in the re-analysis of the HERO data by Stephen Biddle and Stephen Long and the connection is made somewhat more clearly by Michael Desch. The latter claims that the apparently strong connection between democracy and battlefield effectiveness found by previous studies was in fact due to the effects of higher levels of human capital in democracies rather than regime type per se (Desch 2008). Consequently, those autocracies, such as Germany, which happened to have high levels of human capital, would be at least as effective as democracies at a similar level.

The contention of my theory is that human capital plays a more constrained role in military effectiveness. As may be recalled from the theory chapter, human capital works by generating a pool of candidates with the basic minimum foundations on which further military training can be built, thereby increasing competition for officer posts. My theory is therefore
somewhat different from that of Biddle or Desch in that lower levels of human capital are simply one of the many different choke points which can constrict the flow of talent into the officer corps.

That said, the precise nature of the causal mechanism linking human capital and destructivity in Biddle and Desch’s works is under-developed. Moreover, labor economics is also surprisingly short on precise causal mechanisms linking human capital and productivity in civilian life (Abowd et al 2002). While the relationship between a specific kind of education and productivity may be clear (for instance, an electrical engineering firm should clearly expect to increase their productivity by hiring someone with a PhD in electrical engineering), it is not obvious why higher levels of more general education should lead to higher productivity (for example, why a firm would be more productive for hiring someone with a Bachelor’s Degree in Political Science than someone with no degree at all). Some economists still believe, in fact, that general education serves merely as a screening device whereby employers can gain some idea of an employee’s personal attributes prior to hiring (Spence 1973).

In view of this, one can see four potential rival mechanisms to my own which may connect human capital and destructivity. I will first outline them and then explain why my theory does a better job of explaining the effectiveness of the early twentieth century German Army.

The first is quite simple – basic literacy allows troops to understand their orders and instruction manuals for the equipment which they operate. Expanding on this, it could be that the initiative which I have described so far relies on all enlisted men understanding their orders well so as to be able to carry out orders if their Junior Officers and NCOs are killed or otherwise
incapacitated. This in turn will clearly be much more likely if the enlisted men, like the Junior Officers and NCOs, are also literate.

Certainly, there is some evidence to support this view. For instance, German enlisted men of World War One are known to have been provided with a relatively high level of training throughout the war, including lectures on tactics and military history. Partly, of course, this may have been to enable them to continue to achieve objectives if their leaders were no longer able to direct them. Moreover, this was clearly possible because pre-war Germany had already reached practically 100% adult male literacy.

However, it is hard to see that this provides the main wellspring of German destructivity. For most of Germany’s World War One and World War Two adversaries had also obtained close to 100% literacy before the war (Sanderson 1999; Annuaire Statistique de la Republique Francaise 1951). The only major exception is Russia. Russia endured a very low rate of literacy under the Tsars which improved under Communist rule, but was still far below 100% by the time of World War Two (Fitzpatrick 1994).

Thus although Germany enjoyed a somewhat higher standard of human capital development than the Western Allies, this is not compatible with the argument that basic literacy among enlisted men is the key factor explaining high levels of German destructivity. Germany enjoyed a consistently higher level of military effectiveness than the British, French or Americans even though all three Western powers would have had universal or near universal literacy in their enlisted ranks. The link between human capital and destructivity must be a more subtle one.

In this respect, an alternative mechanism linking human capital and destructivity presents itself. In a society with a high level of human capital, it is imperative for individuals to continue
to acquire high levels of education themselves so as to remain competitive in their national labor market. This could lead to a positive spillover of skills from the civilian labor market to the military in time of war. In early twentieth century Germany, given that human capital development was already very high, the costs of not acquiring a good basic education in terms of employment opportunities for any individual could be reckoned very high (Vincent 2000).

This leads then to the possible explanation that individual Germans acquired a high level of technical and scientific education in order to find work in German industry, which as a by-product allowed them far more easily to operate complex military machinery in war time. This in turn could provide the missing link to German military effectiveness.

For instance, even in the early twentieth century, German recruiters are known to have favored conscripts from industrial backgrounds, as it was felt that they would be easier to teach in the operation of complex military equipment such as mortars or heavy machine guns (Samuels 1995). Moving forward in time, the German Panzer Troops’ ability to repair their own equipment in the North African Campaign was noted as an important advantage by their British and Commonwealth opponents (Hastings 2009).

Yet although spillover effects from the high technological skills required in civilian industry undoubtedly existed for the German Army of both World Wars, a closer look reveals that the extent of these linkages was limited.

For one, Germany’s segmented labor markets severely restricted the amount of back and forth between the military and civilian industry, at least for the professional officers and NCOs who formed the backbone of the German Army. German Army officers were mostly taken into the military training system from a very young age (11 in the case of the cadet schools) and
remained there for the rest of their working lives. Entrance to the cadet schools required a short test in verbal aptitude, basic literacy and arithmetic (Moncure 1993). The entrance requirements for the officer corps of the Reichsheer, Wehrmacht and Waffen-SS did not place a great emphasis on general technological proficiency. The general university entrance exam, the Abitur, was not required for a commission in the German officer corps until 1920 (Corum 1992), and was abolished again as a requirement in 1942 by Hitler (Knox 2000). As for the elite General Staff Corps, this required entry to the pre-World War One German War Academy, which in turn was based on an examination of eight papers. The subjects of these eight equally weighted papers were artillery and small arms tactics, fortifications, topography, history, geography and French or mathematics- not subjects requiring a particularly high level of understanding of civilian technology (Samuels 1995). The Waffen-SS entrance criteria laid even less stress on technological education – besides the bizarre racial selection criteria employed by Himmler (more of which later), recruitment into the Waffen-SS was governed according to a battery of medically designed tests for physical stamina, dexterity, agility, build and courage, along with a basic intelligence test including a literacy test and some mathematical problem solving (Ziegler 1999). Waffen-SS officers were never required to have passed the Abitur, and many had only an elementary school education (Ziegler 1999).

Once in the officer corps of the Reichsheer, Wehrmacht or Waffen-SS, officers in the fighting arms were exposed to a relatively small amount of training in advanced technology. For instance, the General Staff College of the Reichsheer broke down its weekly tuition hours as follows: tactics and general staff service, 16 hours, war history, 12 hours, general military subjects, 11 hours, academic subjects, 13 hours and mathematics or a foreign language, 15-18 hours (Samuels 1995).
In other words, both the selection and training of German officers was strongly based around the discovery and acquisition of military specific skills rather than skills which could have a dual military-industrial application. Moreover, it was these military specific skills for which the German Army was noted rather than for the excellence of its technical supporting arms. For instance, the stormtrooper tactics which Biddle and Gooch refer to as the basis of modern war were developed by officers and NCOs with relatively low levels of technology—carbines, pistols, daggers, clubs and hand grenades (Samuels 1995) – but high levels of motivation and military specific skills. In fact, a strong case could be made that both technical support and technological innovation were higher in the British and American Armies of World Wars One and Two than in the German military. This will be discussed at greater length in the British comparison case to follow.

Quite simply, it would be mistaken to view Germany’s high levels of destructivity as a direct spillover from the high levels of technical education required by German industry.

This discussion also makes it hard to accept another potential mechanism linking human capital and destructivity. According to this view, higher levels of general education may translate directly into improved higher cognitive functioning. More education, in this view, may improve one’s problem solving, lateral thinking or communication skills regardless of the content of that education. This was the theory which lay implicitly behind the late nineteenth century belief in many European countries that ancient languages such as Greek or Latin provided a ‘training for the mind’ even if the content of these languages was not in itself practical (Barnett 1986). This view may still influence hiring managers in many LME firms to this day who often hire graduates meeting certain grade requirements regardless of their major field of study.
As we have seen however, this is hard to square with the German military’s recruitment and selection procedures – officers’ general education in the Heer was often very stunted, having been curtailed in favor of military specific education from a relatively young age. German cadet colleges did not compel candidates to take the Abitur before World War One and it was not a requirement for a commission until the 1920s. In consequence, the level of general education of the German officer corps was significantly lower than that of comparable German civilian professions for most of the early twentieth century – a fact remarked on by many foreign observers (Demeter 1965).

Could Spence’s view of education as a screening device possibly help shed some light on the link between human capital and destructivity? Recall that, according to this view, education is useful to a firm because it allows them to separate low work ethic or ability employees from the high. Analogously, in a high education country, the Army could make use of increasingly fine-grained levels of educational attainment to separate out good from bad quality recruits. Given that it has more confidence that it has not recruited a basket full of lemons, the Army can then more confidently train its men more intensively and give them more leeway in missions, knowing they have the cognitive skills and work ethic to perform successfully without supervision.

This view, however, founders on the reluctance of both the Reichsheer and later the Waffen-SS to use civilian credentials in selecting and promoting suitable officers. In fact, all German ground forces used their own in-house screening procedures – in addition to the Waffen-SS and Reichsheer selection procedures mentioned above, all German formations made Junior Officers serve probationary periods as NCOs or officer candidates (Fahnenjünger) for at least one year in order to weed out incompetent or cowardly ‘types’ (Ripley 2004).
In short, then, the highly efficient German Army was not the result of spillovers from Germany’s high level of industrial and technological education, nor of Germany’s high level of general education and human capital. Nor was the German Army’s destructivity the result of significantly superior technology produced by German industry – in World War One, superior German grenade manufacture was counterbalanced by better British heavy machine guns (the Lewis gun), which German troops preferred to use over their own model whenever they were able to capture them. In World War Two, the standard German battle tank the PKWIII was considered inferior in armor and range to the French Char B (Tooze 2006). German tanks enjoyed technical superiority over the British until mid-1942 with the adoption of the American Grant tank (Keegan 1991), and again after mid-1944 with the adoption by the Germans of the Tiger (Ripley 2004). However, the Soviet T-34 was generally recognized as technologically superior to the Germans machines (Sharp 1999). In terms of artillery, the German 88m anti-aircraft gun was widely feared by Allied tank crews, but this was mostly because of the innovative tactical use which German units made of them – the British equivalent anti-aircraft weapon was equally technologically sophisticated, but the British Army’s units did not hit on the idea of using them in the same way the Germans used the 88m (Keegan 1991). Quite simply, then, the German Army’s high level of destructivity cannot be traced back to superior technology either.

6.3 Coup Proofing

In the case of the Kaiser, many factors contributed towards a relatively high degree of safety from his own Generals. Most obviously, the age of the Hohenzollern regime gave the Kaiser the benefit of the mutual expectations of stability described in the theory chapter. The Kaiser’s ancestors had ruled in Prussia for centuries (Clark 2006). The dynasty’s rule over all of
Germany dated back only to 1871, but was legitimized in turn by the recognition of the Kaiser as Emperor of all of Germany by the other German Royal Houses. Moreover, Prussia formed the majority of his holdings and the most powerful military force in the Empire. Any German General who harbored hopes of installing himself as Kaiser would have had to assume a very low probability of getting anyone to join in his plans. Even very charismatic and influential civilian political leaders such as Bismarck were ultimately constrained to accept the Emperor’s authority as final. When Bismarck and Kaiser Wilhelm II clashed, the former very publicly attacked the latter’s policies, but appears never to have contemplated seizing power as head of state himself. Instead Bismarck accepted Wilhelm’s authority and resigned (Mann 1978).

To this, a skeptic might retort that the Kaiser’s powers were in fact in the end usurped by his military men in the form of Ludendorff and Hindenburg during World War One. In 1916, the latter two figures managed to persuade the Kaiser to remove the incumbent Chief of Staff von Falkenhayn and replace him with Hindenburg with Ludendorff as his deputy. The Kaiser described this episode as equivalent to an abdication, and one modern day historian has depicted Germany from 1916-1918 as a ‘silent dictatorship’, run by the two military men (Kitchen 1976). Hindenburg and Ludendorff made almost all of Germany’s operational and strategic decisions from then on and even interfered with domestic politics, for instance by issuing their own war propaganda (MacDonogh 2000).

Yet these developments should not be seen as the equivalent of a coup. Essentially, the Kaiser outsourced his strategic decision making to Hindenburg and Ludendorff in order to win the war and thereby save his own dynasty (Goemans 2000). Neither Ludendorff nor Hindenburg actually considered setting themselves up as Kaiser in Wilhelm’s place, nor abolishing the
monarchy and establishing themselves in an extra-constitutional Fuehrer-type position. The Kaiser retained the ultimate power to dismiss Hindenburg and Ludendorff, and in the case of the latter eventually exercised it successfully. Hindenburg and Ludendorff exercised their power not by threatening to overthrow the Kaiser but by threatening to resign and force him to direct the war without their guidance (Lee 2005). In the final reckoning, both Generals did not think to question the legitimacy of the Kaiser’s office, even if they were frequently exasperated by Wilhelm’s personal decisions (MacDonogh 2000). Even after World War One -when the Kaiser had been forced from office largely to comply with the demands of the Entente powers - former military officers in Germany including Hindenburg still drank to the Kaiser’s health at reunions (Mann 1978).

Thus, in comparison with many modern day autocratic rulers, the Kaiser’s position was relatively secure against the dangers of a military coup. Consequently he was able to open the German Army’s officer corps up to the upper and middle classes of Imperial Germany – a substantial enough proportion of the German population to generate stiff competition for officer posts and promotions. Moreover, once in the German Army, numerous steps were taken to ensure that promotion was based purely on merit – all candidates sitting written exams for promotion were identified only by their candidate number rather than by name, for instance (Samuels 1995), and exam takers were seated far apart from one another to minimize the potential for cheating (Moncure 1993).

Hitler, by contrast, occupies a middle-point between the time-honored dynastic legitimacy of the Kaiser and the perennial coup vulnerability of many modern day developed world autocrats. Hitler was clearly not the scion of a monarchical regime which had ruled stably
for centuries. Yet at the same time, the large size of the German Army and the very fact that Germany had never before had a coup gave his regime a greater margin of safety from internal threats than a Saddam Hussein or a Muammar Gadhafi. Consequently, Hitler engaged in some of the coup-proofing behavior which characterizes many modern day autocracies, such as creating a parallel military organization, but not in others, such as selecting and promoting on the basis of political loyalty rather than military skill.

There is no question that Hitler distrusted his Generals from early on in the history of his regime (Engel 2005). He believed that they were simply not sold on his National Socialist ideology and that they despised him personally. Based on the tapings uncovered by Neitzel, Hitler was most certainly not wrong. Undoubtedly, many Wehrmacht Generals after World War Two had strong incentives to exaggerate the extent of their opposition to Hitler. Yet no such incentives can explain the virulent opposition expressed towards the Nazis by senior Wehrmacht officers such as von Thoma (Neitzel 2007) and Choltitz (Neitzel 2007) in conversations they did not realize were being overheard or the remarks these captured officers reported overhearing from other senior officers such as Erwin Rommel and Heinz Guderian (Neitzel 2007). In short, many senior German military officers loathed or came to loathe Hitler’s regime, as Hitler himself had long suspected (Engel 2005).

Under the Kaiser’s rule, the German Army was the undisputed sole bearer of arms in the German state. In spite of the early assurances of Adolf Hitler to the contrary, the same was not true of Nazi Germany. Under the guidance of his deputy Heinrich Himmler, Hitler allowed for the creation of a parallel military organization in the guise of the SS-Verfügungs-Truppen (later
known as the Waffen-SS). This organization grew from an estimated 300 individuals before the Nazi seizure of power in 1933, to 330,000 by 1943 (Koehl 1983).

However, contrary to the theories of those who link parallel militaries and ineffectiveness, in the Waffen-SS Hitler simply created a second, highly effective military force alongside the Wehrmacht. The recruitment and training of the Waffen-SS will be discussed in more detail below; however, it suffices here to note that few of the mechanisms linking parallel military organizations and ineffectiveness were in effect in this case.

First, as we have seen, the existence of a second ground force did not lower the fighting effectiveness of the Wehrmacht. Although, as will be detailed later, the Waffen-SS did draw off many talented officers who could have excelled in the regular Army and much of the best equipment, there was still a sufficient supply of good candidates and weapons left to maintain high standards in the Third Reich’s main force.

Second, at the same time, the Waffen-SS itself proved to be no mere organization of political lackeys. Although in the early stages of the Polish campaign some of its units proved to be raw and rashly led, the Waffen-SS went on to gain a reputation as one of the most effective fighting forces of modern times, acting as a ‘fire brigade’ against the most dangerous Soviet attacks on the Eastern front and providing the stiffest resistance to the Allied invasion of Normandy (Snydor 1977). Quantitative data disaggregating the contributions of the Waffen-SS relative to the Wehrmacht is still scant, but what does exist appears to bear this out. For instance, the HERO data gives the six SS Corps involved against the Western Allies an average score effectiveness rating of 2.34, significantly higher than the score effectiveness of the Western Allies
against German formations, although surprisingly slightly lower than the Wehrmacht (Dupuy 1978).

Third, the historical record does not reveal the Waffen-SS and the Wehrmacht to have suffered from a debilitating inter-service rivalry during World War Two. Early reports during Hitler’s reign suggested a strong dislike for the ‘Black Corps’ as the SS were known amongst the Wehrmacht’s officers. For instance, Hitler’s adjutant Major Gerhard Engel reported in his diary in 1938 that “the attitude of the SS towards us (the Wehrmacht) was monstrous” (Engel 2005). Moreover, after the war, Wehrmacht veterans had strong incentives to exaggerate the extent of the hostility between them and the SS in order to minimize their role in the war crimes of the Hitler era (Wette 2006). However, during the war itself, most observers report a high degree of camaraderie and cooperation developed between the two German services. For instance, former Field Marshal Heinz Guderian, writing in his memoirs after the war when he had every incentive to maximize the difference between his formation and the SS, claimed that “(Himmler’s) favoritism was unimportant in comparison with the feeling of comradeship which existed on the battlefield between Waffen-SS and Army formations” (Guderian 1952).

Fourth, the Nazi leadership did not keep the Waffen-SS back from the front in order to protect the regime, or sacrifice the Wehrmacht in order to preserve the Waffen-SS, as certain Middle Eastern rulers are understood to have done with their parallel military forces (Quinlivan 1999). In fact, the SS’s casualty rate of approximately one third of total strength killed was unsurpassed by any other fighting force in World War Two other than the Imperial Japanese Army (Ripley 2004). This could be ascribed to the fact that the SS was often used by the German
leadership in a ‘firefighting’ role, often to rescue Wehrmacht units which had been cut off by the Soviets or were under heavy attack (Ripley 2004).

Finally, contrary to Pilster and Boehmelt’s speculation about the lack of cross-branch training in states with parallel military organizations, both the Wehrmacht and the Waffen-SS contained armor, artillery, infantry and armored infantry and training schools to give officers experience in handling them. For instance, the Waffen-SS had its own artillery school at Glau and a panzergrenadier (armored infantry) school at Keinschlag (Ripley 2004).

Moreover, while Hitler did create a parallel military organization, what he did not do was to allow political loyalty rather than military skill or achievement to determine either recruitment or promotion in either of his Armies. As we have seen, the only change Hitler made in the Wehrmacht’s promotion policy was to increase the importance of battlefield heroism relative to seniority – a change wholly justifiable on military grounds alone. Even the SS, although more political than the Wehrmacht, were also recruited, trained and rewarded largely with reference to military skill and achievement.

Not only were Wehrmacht officers not forced to become members of the Nazi Party, but in the first year of Hitler’s reign, they were compelled to foreswear membership in any political party, including the Nazis (Kane 2002). Moreover, Omer Bartov’s sample of service records from Wehrmacht armored units on the Eastern front, suggests that there was no correlation between Nazi Party membership and promotion once the ban on party members in the military had been lifted (Bartov 2001).

As for the Waffen-SS, their strange recruitment practices have been much remarked on. The original Waffen-SS entrance requirements for a candidate were as follows: a minimum
height of 1.74 meters, 20/20 vision, a personal history prepared by the candidate himself, police statements on his (lack of) a criminal record, a certificate of medical fitness, a letter of recommendation from his last employer, a sworn statement of loyalty to Adolf Hitler and a testimony that he had not been a member of an opposition party or a Masonic lodge and finally a genealogical table and documents proving his Aryan ancestry back to 1800. Applicants also had to fulfill stringent additional health criteria such as an absence of ‘nervous disorders’ or a history of tuberculosis and venereal disease (Gelwick 1971). Of these criteria, the health, height, police checks and letters of recommendation would not be out of place in any military. Indeed, Walter Struve suggested that the SS’s apparent racial selection criteria “provided an often transparent veil for other standards, of which one of the most clearly stated was ability or achievement” (Struve 1973). This then raises the question - how restrictive in reality were the SS’s political and racial criteria?

Some modern political scientists have suggested that the purpose of the genealogical requirements was to reduce the size of Hitler’s winning coalition (Bueno de Mesquita et al 2003). It could also be maintained that the genealogical requirement was in effect a screening device to weed out potentially disloyal elements. However, it appears that these selection criteria were genuinely designed to fulfill the Nazis’ eccentric racial beliefs and were not simply an arbitrary excuse to screen out potential coup leaders – whether candidates passed the racial requirements was decided according to stringent guidelines by a specialized office of ‘professional’ racial scientists – the Rasse und Siedlungsamt (Gelwick 1971). When the Nazis expelled Jewish officers from the Wehrmacht, this reduced the officer corps by only six individuals (Demeter 1965). Moreover, the criteria for entrance into the SS were gradually relaxed throughout the war, so that many thousands of non-Germans and even non-’Aryans’ were recruited – in addition to
the well-known Nordic legions of Danes, Swedes, Norwegians, Dutchmen and Flemings, the
Waffen-SS eventually came to include Russian former Prisoners of War, Bosnian Muslims and
even Indian former PoWs (the Indische Legion) (Koehl 1983). As for political leanings, as the
war progressed, the Waffen-SS simply drafted graduating high school students on the same basis
as the Wehrmacht (Guderian 1952).

Promotion in the Waffen-SS, as in the Reichsheer and Wehrmacht, was partly determined
by efficiency reports. According to Robert Arthur Gelwick, the reports centered on ‘strengths and
weaknesses of character, professional competence, relations with superior officers, equals in rank
and subordinates, ideological leanings and convictions, conduct in the face of the enemy and
suitability for current assignments and the next higher positions in rank and employment’
(Gelwick 1971). Note that ideological leanings and convictions are only one of six qualities on
which candidates were rated. Moreover, Gelwick also notes that the rated officers were permitted
to view their annual efficiency review (Gelwick 1971).

The only other difference between the Waffen-SS’s promotion practices and those of the
traditional German Army was that aspiring officers were supposed to spend four years in the
ranks prior to commissioning and exceptional battlefield achievements (Leistungen) could allow
an individual to circumvent the usual seniority requirements and be promoted straight away
(Ziegler 1989).

The Waffen-SS was clearly more political in recruitment and selection than the
Wehrmacht or the Reichsheer. Yet the proportion of Germans who were effectively prohibited
from joining its ranks was actually somewhat smaller than one might imagine, even in the early
years when its racial requirements were still enforced. The ban on membership of opposition
parties is taken by Herbert Ziegler to mean that former members of the two Weimar left-wing parties – the SPD and the KPD – were not eligible to join the SS. To give some idea of how much of a restriction this was, the SPD in 1930 had a membership of just under 1 million out of a total German population of 80 million and of this membership less than 9% were under the age of 25. The KPD in turn had a membership of around 300,000 in 1932 (Sworakowski 1973). The Jewish part of the German population was estimated at 600,000 in 1933, plus as many as 750,000 Mischlinge or part-Jewish Germans who were eligible for service in the Wehrmacht but not the Waffen-SS (Rigg 2009). Thus at a generous estimate around 4% of the pre-World War Two German population were excluded from applying to the SS. In light of this, it is not surprising that, especially in the crucial mid 1930s when the SS was undergoing its most rapid expansion, positions in its ranks were oversubscribed (Ripley 2004). Ziegler’s exhaustive analysis of SS officer biographies led him to conclude that the prospects for rapid advancement in the SS attracted into the German officer corps for the first time individuals from a working class background as well as the more traditional middle and upper classes (Ziegler 1989). This influx appears to have more than compensated for the slight narrowing of the recruitment funnel through the exclusion of political and racial minorities.

Moreover, once in the Waffen-SS, training revolved mostly around military skill rather than political loyalty. For instance, all of the most common reasons for failing the course at the SS Junker-Schule (Officer Training School) revolved around insufficient military knowledge rather than lack of loyalty to Hitler (Wegner 1982). The course and exam content at the Junker-Schulen is likewise revealing. Only 7 hours of instruction out of 52 weekly (approximately 8%) were devoted to political indoctrination (‘Weltanschauliche Erziehung’) versus military subjects.
such as tactics, geography, military technology, military law and physical exercise and only 18% of the marks in the qualifying exam were devoted to Nazi ideology (Wegner 1982).

Thus the Wehrmacht did not allow personal loyalty to Hitler, as opposed to military competence, to determine recruitment and promotion to any great extent. The Waffen-SS were more politicized, but even here military competence and achievement were far more important for entrance and advancement than ideology. In short, when it came down to the crucial recruitment, training and promotion of military personnel, Hitler did not allow coup proofing to get in the way of destructivity.

This need not necessarily have been the case. Prior to his rise to power, Hitler had spoken of creating a new ‘People’s Army’ to replace the old Reichswehr (Bullock 1979). The leader of the Nazi paramilitary streetfighters the SA (also known as the Brownshirts) – Ernst Roehm – urged Hitler to do precisely that. Roehm believed that the SA and the Army (then still the Reichsheer), should be merged with Roehm himself as Chief of Staff. Given that the SA massively outnumbered the still-small Reichsheer, this would have effectively amounted to swamping the Army with Hitler loyalists (Kane 2002). Of course, Hitler had good reason to distrust Roehm’s own ambitions. But this need not, by itself, have fundamentally changed the nature of his calculations. Hitler could always have swamped the Reichsheer with Brownshirts without installing Roehm as Chief of Staff.

Instead, Hitler chose drastically to curtail the power of the SA in the notorious ‘Night of the Long Knives’ purge. For this, he received the gratitude of the Reichsheer and its officer corps, who participated in it along with the SS (Kane 2002).
In his in-depth study of Hitler’s decision making process in the period leading up to the purge of the SA, Immo von Fallois pointed out that ‘Hitler decided in favor of maintaining the Reichsheer’s monopoly on the use of force also because of the professional competence of the officer corps. In light of the rapid rearmament he saw the monopoly on the use of force as being best kept in the hands of the technically and strategically competent Reichswehr (von Fallois 1994)’. Norman Goda concurred, noting that ‘Hitler viewed Stalinist-style purges as a risk to the Army’s professional competence (Goda 2000)’. Hitler had the highest respect for the Reichsheer of Imperial Germany:

“The German Army at the turn of the century was the most magnificent organization in the world and its effect on our German people one that was more than beneficial.” (Hitler 2003)

In short, Hitler’s strategy is rather puzzling given the purported relationship between coup proofing and military effectiveness. Instead of emasculating his Army in order to keep himself in power (as he would effectively have done if Roehm’s plan had been adopted), Hitler retained and in some ways even improved upon a highly meritocratic Army even at the expense of empowering political opponents. How did he manage to accomplish this tricky feat?

For one, as my theory predicts, mounting a coup presents an acute collective action problem. As Admiral Walter Hennecke and Colonel Rudolf Mueller-Roemer discussed in one of the conversations which were secretly taped by British intelligence:

“HENNECKE: That’s the trouble; if only all senior Army leaders had unanimously said: ‘We won’t participate in that dirty work! It is dragging the name of Germany in the mud’

MUELLER-ROEMER: It didn’t do the few who did say that any good

HENNECKE: If they had all done it, in good time! The fact that such things were possible will puzzle world historians!
MUELLER-ROEMER: History will hold the German Generals responsible for not having unanimously stopped all the dirty work which started at the outbreak of war, by simply protesting and laying down their arms – or something of that sort.

HENNECKE: All the Generals are protesting. I used to say to them: ‘If you knew all that, I can’t understand why any of you, or the entire body of Generals didn’t protest’. They all said: ‘I don’t want to play with fire’.” (Neitzel 2007)

The first part of the answer lies in the continuation of the mutual expectations that German officers would not mount a coup. Although Hitler’s regime was clearly not a direct continuation of the Hohenzollern monarchy, Hitler had assumed power legally from the Weimar Republic which had succeeded the Kaiser. Moreover, as Germany had never had a military coup, actors realized that such a step now would be a truly revolutionary departure. Given that most officers could see that other officers were reasoning likewise, the very fact that Germany had never before had a coup served as a deterrent to any coup attempt against Hitler in the present. Hitler himself tapped into this by making the Wehrmacht’s officers swear a personal oath of loyalty to him, as they had to the Kaiser, from 1934 onwards (Kane 2004). General Ludwig Beck – a staunch opponent of Hitler – described the day on which the oath was sworn as ‘the darkest day of my life’. He also pointed to a famous dictum dating back to General von Schlieffen of the Kaiser’s Army that ‘the word mutiny is not in the vocabulary of the German officer (Deutsch 1974)’. Similarly, Erich von Manstein, whose relationship with Hitler was very poor, commented to a subordinate that ‘Prussian Field Marshalls do not mutiny’ (Goda 2000).

Indeed, when von Stauffenberg did mount his famous assassination attempt on Hitler, even many anti-Nazi Generals believed the attempt to be a fraud. Many suspected an elaborate inside job on the part of the Nazi leadership. For instance, British intelligence recorded the following conversation between General Ritter von Thoma and Lieutenant-General Theodore Graf von Sponeck:
“SPONECK: Nobody was really wounded. That seems suspicious to me, I mean if it had been a real attempt on Hitler’s life none of them would still be alive.

THOMA: If they had a mine in there – an ordinary anti-tank mine-
SPONECK: A hand grenade-
THOMA: It seems fishy to me” (Neitzel 2007)

Likewise, this conversation between Lieutenant-General Otto Elfeldt and his fellow officer Radinsky:

“ELFELDT: What do you say to the hanging of the German Field Marshalls?
RADINSKY: My answer was always: ‘What do you think of German officers raising their hand against their supreme commander for the first time in German history?’ The whole thing is abnormal.’ (Neitzel 2007)

Indeed, many historians believe that the July 20th assassination attempt on Hitler was undertaken even though the plotters knew that it was unlikely to succeed. The plot was more a gesture to posterity than a genuine attempt to seize power. As one of the plotters, Major-General Henning von Tresckow, told von Stauffenberg:

“The assassination must be attempted at any cost. Even should that fail, the attempt to seize power in the capital must be undertaken. We must prove to the world and to future generations that the men of the German resistance movement dared to take the decisive step and to hazard their lives upon it. Compared with this object, nothing else matters.” (Evans 2009)

As well as the lack of a tradition of coups in Germany, a second factor which inhibited the ability of German officers to move against Hitler was the rapidly increasing size of the Wehrmacht, as my model predicts. The Reichsheer of the Weimar Republic had been limited to 100,000 men by the terms of the Treaty of Versailles (Deutsch 1974). Consequently, the officer corps of the Weimar-era Army, from whom the Senior Leadership of the Wehrmacht was drawn, was relatively closely knit and had known each other for a long time. However, from 1934 onwards, Hitler re-introduced conscription, renounced the size limitations on the Army imposed by Versailles and expanded the Army to almost two million men by 1939 (Cooper 1978), and
over 3 million by the peak of World War Two (Cooper 1978). Thus, the Senior Generals of the Wehrmacht were faced with a flood of new Junior Officers and enlisted men whose political views they had very little inkling of. The closest which Senior Wehrmacht Officers came to acting against Hitler was in 1938 during the Fritsch-Blomberg affair. As Harold Deutsch writes in his definitive account of the crisis:

“One of the strengths of totalitarian systems in defending themselves against a multiplicity of discontents lies in the suppression of their manifestations. It is virtually impossible for opposition elements to evaluate with confidence their own power or the degree of potential support….The hazards of sounding out even the most likely prospects and of clandestine communication were crippling impediments to recruitment and the formation of alliances between already existing groups of Resisters.” (Deutsch 1974)

“Those in the military hierarchy who were then or later forced to weigh the chances of a coup were of course primarily pre-occupied with what they might expect of their troops. Both the little that is available of contemporary auguries and postwar testimony indicate that here too the fresher recollections of later periods have led to a frequent underestimate of sentiments receptive to a ‘call to arms’ in 1938.” (Deutsch 1974)

Because of the large size of the Wehrmacht, potential plotters were reluctant to strike because they feared that the rank and file, whom they did not know, would not obey. General Franz Halder, a committed opponent of Hitler, remarked to a fellow anti-Nazi from the foreign intelligence service the Abwehr:

“The attitude of the generals [is] irrelevant; the decisive factor in any projected coup d’état would be the attitude of the lower officers, because they had the closest contact with the bulk of the soldiers.” (Kane 2004)

Halder himself based his estimate of the probability that the Junior Officers would join on the attitudes of his pro-Hitler sons-in-law who had recently joined the Wehrmacht as Lieutenants. Having little else to go on, Halder estimated that a coup would be unlikely to succeed and declined to participate (Kane 2004).
Yet at the same time, many officers and men too far down the line to be able to have any strong ties with the Senior Generals were, by many accounts, also in favor of deposing Hitler. Former Bundeswehr Generals Bernd von Freytag-Loringhoven and Peter von Butler, then serving as Lieutenants, told Deutsch that they and the enlisted men in their platoon would have been willing to move against Hitler immediately if ordered to do so by the Senior Generals (Deutsch 1974). Lest this be considered self-serving post-war testimony, similar sentiments were expressed in the secretly taped conversations by German PoWs who had been Junior Officers in the 1930s. For instance, Major-General Ludwig Krug and Colonel Walter Koehn (judged by the Wehrmacht’s internal reports to have a ‘correct National Socialist attitude’ (Neitzel 2007)) said in captivity in 1944:

“KRUG: Brauchitsch ought to have said: ‘I beg to resign’
HENNECKE: They were all with Hitler previously and they all cooperated. Each one of those in command at that time is equally to blame.
KRUG: I was an insignificant Major.
KOEHN: Yes, we could do nothing.” (Neitzel 2007)

The large size of the German Army thus produced a classic collective action problem. The Junior Officers from General downwards were simply too disconnected from one another and from the Senior Leadership to be able to trust that they could successfully mount a coup. The Senior Leadership, by contrast, not only faced the problem of organizing a coup amongst themselves, but also of ensuring that they would be able to secure the support of the lower levels of the Army if they overcame this first collective action problem. The Senior Leadership, however, were the only actors in the Wehrmacht with sufficient leverage to pose a genuine threat to Hitler.
Recognizing this, Hitler set about suborning the Senior Leaders at the very top of the Army through a variety of stratagems involving personal patronage. First, in the aforementioned Fritsch-Blomberg affair, he removed the two most Senior Wehrmacht officers whose loyalty he considered suspect – Fritsch on fabricated charges of homosexuality, and Blomberg on charges of marrying a prostitute (Deutsch 1974). He replaced them with a General Werner von Brauchitsch who had recently been divorced from his wife on grounds of adultery. Hitler personally secretly paid von Brauchitsch’s divorce settlement from his own pocket (Deutsch 1974). As the British ambassador to Berlin Sir Robert Vansittart noted:

“Hitler has a stranglehold on Brauchitsch of some private and discreditable kind; whether it is connected with the fact that Brauchitsch is billed for divorce or for something dirtier still, I am at present unable to say.” (Deutsch 1974)

In short, then, two factors gave Hitler a relative invulnerability to a coup. The first was the common knowledge that Germany had never previously suffered a coup. Each German officer knew that all other German officers considered such a step to be a huge break with Germany’s military traditions. Consequently each officer would have to rate the probability of others joining in to be much lower than in a country where coups were commonplace. Given that the probability of getting help from others was lower, the safest option was to continue to support the regime.

Second, the large size of the German military under Hitler made a coup even harder to organize. Senior level Wehrmacht Generals generally knew each other well enough, but they were separated by many levels of the chain of command from the Junior Officers and enlisted men. Given that they could have very little or no inkling of what those lower levels of the Army were thinking, again they thought it best to err on the side of caution and continue to support the regime. Tragically, it is quite possible that many lower level troops were likewise opposed to the
Nazis but had no way to communicate to higher level officers their readiness to move against Hitler if the word were given.

The July bomb plot does not invalidate the fact that Hitler’s regime was relatively secure against a challenge from the Army. The bomb plot was undertaken with little hope of success on the part of the plotters. Rather it was a grand moral gesture against the Nazi regime for which the plotters fully expected to pay with their lives. The majority of German generals and perhaps the majority of human beings are less capable of such self-sacrifice.

Thus the German Army was not hampered by coup proofing in either World War. As the Kaiser was the head of a royal family which had ruled in Prussia for centuries without a challenge from the military, he could afford to operate relatively meritocratic selection and promotion procedures and to maintain the Reichsheer’s monopoly on the use of force. Hitler’s position was less secure and he engaged in some characteristic coup proofing behaviors such as creating a parallel military organization. However, the large size of the German Army and the fact that Germany had never before had a coup gave Hitler a margin of stability which many other modern autocrats did not have. Consequently, Hitler could afford to keep military skill and achievement rather than political loyalty as the key determinant of the all-important selection and promotion system in both his military formations. The fact that, by doing so, Hitler simply created two very effective military formations, casts doubt on the argument that parallel military organizations by themselves undermine destructivity.

6.4 External Threat
Realism appears to offer a compelling explanation for German destructivity. Realists would tend to argue that Germany’s geographical position and lack of allies compelled the German state to develop a highly destructive military in order to survive (Mearsheimer 1990). Certainly, this position is attractive.

Germany’s victory over France in the war of 1870 formed the basis of German unification and national power, but left the state with an acute level of vulnerability. To the west, France desired revenge for the capture of Alsace-Lorraine. To the east, Bismarck initially attempted to remain on good terms with both Russia and Austria-Hungary. However, over the years, the Russian alliance collapsed and Russia moved into alignment with France. Moreover, towards the end of the nineteenth century, relations with Britain gradually worsened to the point where security competition in the form of a naval arms race took hold. Consequently, the Kaiser’s Germany faced a serious security threat in the east and the west. Although Germany enjoyed the advantages of rapid economic growth and a large population, Germany’s allies were weak and the country lacked natural frontiers.

In response to this strategic challenge, senior German military thinkers rejected the possibility that either numbers or technological advantages would be able to keep Germany safe. One of the foremost Imperial German strategic thinkers – Field Marshall Colmar von der Goltz – pointed out that the technological advances which had spurred German success in the war of 1870 such as breech loading cannon had been rapidly copied by the major European powers. From this, von der Goltz drew the lesson that German security had to rest in ‘intangibles’ such as leadership, training and tactics which he felt were less susceptible to being mimicked by other powers (Samuels 1995).
The importance attached to recruiting and training a first rate officer corps as a cornerstone of German security policy was continued into the Weimar Years by the Reichsheer Chief of Staff von Seeckt. Von Seeckt was able to retain a high degree of independence for the Reichsheer from Weimar politicians and shape much of German grand strategy and defense policy in the 1920s. Von Seeckt believed that the German Army would be able to triumph over numerically superior foes if it maintained its advantage in terms of training. He wrote:

“Anyone who has the smallest idea what technical knowledge, what numerous instruments, operated only by carefully trained experts, what highly disciplined mental faculties are necessary for the effective control of modern artillery fire. Must admit that these essential qualities cannot be taken for granted with men whose training had been brief and superficial, and that such men, pitted against a small number of practiced technicians on the other side, are ‘cannon fodder’ in the worst sense of the term.” (Corum 1992)

Inter-war Germany shared the geopolitical vulnerability of its pre-war counterpart, but for different reasons. The Reichsheer’s high command considered the United States and Britain to have withdrawn from European affairs, so that the major enemies were now France, Belgium, Czechoslovakia and Poland (Corum 1992). Although these enemies sound inconsequential relative to German power in both world wars, in the inter-war years when Germany was limited to a 100,000 man Army by the treaty of Versailles, they appeared formidable. Poland had a peacetime Army of 300,000 men backed by a reserve of 1.2 million men and had designs on German territory in Silesia (Corum 1992). Czechoslovakia had an impressive industrial base to support its Army and France maintained a large standing Army which had invaded the Ruhr in the early 1920s (Corum 1992). In addition to defending Germany from these potential external threats, the leadership of the Reichswehr aimed to restore German territory lost through the Treaty of Versailles, and to destroy Poland. All of these aims together necessitated the
continuation of Germany’s broad funnel of recruitment through the provision of good pay and conditions for troops, and the consequent high standards of training and destructivity.

The leadership of the Third Reich, although of course possessing extreme expansionist aims, was also conscious of what it perceived as Germany’s geopolitical vulnerability. In his unpublished sequel to Mein Kampf, Hitler laid out his view of Germany’s external threat environment:

“Germany at the present time is encircled by three power factors or power groups. England, Russia and France are at present militarily the most threatening of Germany’s neighbors. At the same time French power appears strengthened by a system of alliances which reach from Paris to Belgrade via Warsaw and Prague.

“Germany lies wedged between these states with completely open borders. What is especially threatening thereby is that the western border of the Reich runs through Germany’s greatest industrial region. This western border, however, in consequence of its length and of the lack of all real natural barriers, offers only a few possibilities for defense by a state whose military means seem most extremely limited. Even the Rhine cannot be viewed as a fully effective line of military resistance…. Moreover, this river runs through Germany’s greatest industrial area and consequently a struggle over it from the outset would mean the destruction of the industrial areas and factories technically most important for national defense….But if in consequence of a Franco-German conflict Czechoslovakia should come under consideration as a further opponent of Germany, a second great industrial region, Saxony, which could be useful industrially for the conduct of the war, would be exposed to the greatest danger of war….If Poland also were to take part in such a war, the entire eastern border in addition, apart from a few inadequate fortifications, would be defenseless against attack.” (Hitler 2003)

“Berlin, the Reich’s capital, is barely 175 km from the Polish border. It lies scarcely 190 km from the nearest Czech border, just as far as the distance between Wismar and the Stettin lagoon as the crow flies. Thus this means that Berlin can be reached by modern aircraft in less than one hour from these borders. If we draw a line stretching 60km east of the Rhine, within it will lie almost the entire west German industrial region. As long as France occupies a part of the left bank of the Rhine she is in a position to push forward by aircraft into the heart of our west German industrial region in hardly 30 minutes. Munich is just as far from the Czech borders as Berlin is from the Polish and Czech lands.” (Hitler 2003)

Like the leaders of Imperial and Weimar Germany, Hitler perceived France as one of Germany’s major foes (Hitler 2003). Like von Seeckt, Hitler desired the overthrow of the Treaty
of Versailles (Hitler 2003). In addition to this, however, Hitler believed that Germany would need
to defeat the Soviet Union (Hitler 2003) and in the long run also the United States (Hitler 2003) in
order to provide security and living space for the German people. Hitler hoped to gain British
support or at least acquiescence (Hitler 2003), but realized that this may not be forthcoming
(Hitler 2003).

Support for realist hypotheses may be seen in many of the pronouncements of German
leaders from Unification in 1871 onwards. Concern over Germany’s geographically vulnerable
position was not a particularity of one or other leaders. Indeed, the historical advisor to
Chancellor Helmut Kohl, Professor Michael Sturmer, pointed out the dangers involved in
Germany’s central geographical position as recently as the 1990s².

Yet the realist view is nonetheless unsatisfactory.

First, many central European states are surrounded by potential rivals and lack natural
frontiers without developing high-destructivity Armies. Poland is an obvious example. In fact,
Germany dominated most of its European neighbors in terms of population and industrial
capacity for most of the period in consideration. These states had at least as much reason to fear
Germany as Germany did to fear them, but they did not develop military forces of the same
effectiveness.

Second, Germany spent a surprisingly small amount of money on defense considering its
perceived vulnerability, at least until the rise to power of the Nazis. Had German leaders,
realizing their state’s geographic vulnerability, opened the financial spigots to recruit and train a
highly destructive Army, one could see a clear link between geographical position and

destructivity. Yet Germany spent less per capita on defense than either Britain or France in the years leading up to World War One (Hermann 1968). One of the reasons for this, as we shall see below, was that military pay and pensions in Germany were relatively low. British Brigadier-General Sir James Edmonds, in a historical review shortly after World War Two, termed the German Army ‘an Army on the cheap’. Edmonds pointed out that in the years leading up to World War One Germany was spending £104 per soldier all told as compared with £150 per soldier for Britain. At frequent intervals in the pre-World War One period, the British Secretary of State for War would be asked in Parliament how much a German soldier cost relative to his British equivalent, and for most years the answer would be roughly one half (Edmonds 1951).

The parsimony of German leaders with respect to the Army is especially apparent with respect to military pay and pensions. Historical accounts which stress the relative poverty of German officers when compared with their counterparts in Britain and the United States have failed to account for differences in purchasing power, which make German officers’ wages and pensions appear more miserly than they actually were. Nonetheless there is precious little evidence to suggest that German officers were better paid than British officers. In fact, rank for rank, German officers were generally paid less throughout the period.

Using a variety of British and German primary sources, I compiled a comparative table of pay and pensions for British and German officers at the same rank and similar seniority in pounds sterling, both at the nominal value and adjusting for purchasing power parity. Details on where the data were required and how these measures were constructed appears in the appendix to this chapter.
In 1901, the lowest ranked British officer, a 2nd Lieutenant at the beginning of his career, earned £171 per annum. His German counterpart, a Leutnant of the Reichsheer, earned just over £58 at the nominal exchange rate. Adjusting for purchasing power parity, the Leutnant still fared far worse than his British counterpart, earning the equivalent of just over £78 per annum. The difference was similar for Lieutenants and Captains. For the middle ranking officers, the pay gap narrowed somewhat. A British major earned £388 a year, whereas a German Hauptmann Erster Klasse would take home the equivalent of almost £258 every year. A Colonel on the British General Staff would earn £989 a year versus approximately £682 for a German Stabsoffizier in Regimentkommandeurstellung (Staff Officer in the place of a Regiment Commander). Further up the ranks, however, the difference between British and German officers widened once again. A British General took home £3609 a year whereas a German Kommandierender General (commanding General) earned only £2148 at purchasing power parity annually. The comparative pay of officers in both Armies is displayed graphically below:
The rates and conditions for pensions in the *Reichsheer* were somewhat more generous. German officers were allowed to retire on a pension after only ten years of service, compared with fifteen in the British Army. Moreover, retired officers who had reached the very highest ranks in the *Reichsheer* were better off than their British counterparts. However, for lower and middle ranking officers, British pensions were still more substantial even when accounting for purchasing power parity. These figures are again display graphically below:
Figure 29: British and German comparative officer pay prior to World War One

Following extensive pay rises for German officers under von Seeckt and the deflationary impact of the Great Depression, by 1935 German officer pay had overtaken British rates in purchasing power parity for the lower officers at least. However, higher level officers continued to be better paid under the British system (the Waffen-SS were paid at the same rank-for-rank rate as the Wehrmacht, Gelwick 1971).

Now a German Leutnant slightly out-earned a British 2nd Lieutenant on purchasing power parity terms, £299 to £265. A German major earned substantially more than a British one - £846 to £640. However, from Lieutenant-Colonel onwards, the British enjoyed an advantage. At this rank, a British officer earned £1116 annually, as opposed to the equivalent of £981 for a German Oberstleutnant. A British Major-General, furthermore, far out-earned a German Generalmajor - £2020 to £1503. These figures again are displayed below:
Thus Germany’s high destructivity did not simply result from German leaders, realizing their state’s vulnerability, opening the financial sluice gates to pay for a top quality Army. In fact, per person and per soldier, the Germans spent less on their Army than other states with a lower level of geographical vulnerability. Whether they would have been able to increase military spending significantly in peacetime if this had been necessary to recruit a top quality Army is doubtful. Many historians, such as Niall Ferguson, doubt that Germany would have been able to match British and French levels of spending in peacetime given the constitutional structure of the German Empire, which reserved direct taxation to the individual states but financing the Army to the Federal Government in Berlin (Ferguson 1999). In short, German leaders were able to create a highly destructive military on the cheap for reasons exogenous to the international system.

What those reasons were will be explored below.
6.5 Culture

Culture and ideology represent a popular explanation for German destructivity. Historian Omer Bartov criticized Shils and Janowitzs’ study of German combat motivation in World War Two on the basis of selection bias and preference falsification – that is, Shils and Janowitz based their study of German combat motivation on interviews of German PoWs interrogated by Allied intelligence officers. The motives which German soldiers would have had to downplay Nazi ideology in explaining their will to fight is clear. Analyzing letters written home from the front by German troops, Bartov came to the conclusion that Nazi ideology was a key factor causing men to fight (Bartov 1992).

Similarly, political scientist Jasen Castillo pointed to the culture of early twentieth century Germany as a key factor in German fighting effectiveness. Castillo claims that Nazi achievements and socialization had created a ‘revolutionary’ and later a ‘messianic’ German Army in which soldiers prized the good of the collective over that of themselves (Castillo 2011). As evidence, Castillo also cites letters home from German soldiers supposedly demonstrating a belief in self-sacrifice for the good of the group, and in Nazi ideology (Castillo 2011). Castillo also cites the fact that the German Army continued to fight hard until the end of the war as evidence that German soldiers had imbibed a collectivist ideology which gave them a unique staying power against the Allies (Castillo 2011).

Castillo and Bartov’s evidence, however, needs to be taken with a pinch of salt.
For one, German soldiers’ letters from the frontline were being opened by the SS Security Services in Germany (Evans 2008). Given that even private remarks critical of the Nazi regime could result in a death sentence on the charge of undermining morale (Wehrkraftversetzung) (Mueller 1991), the motivation of soldiers to exaggerate the extent of their adherence to Nazi ideology is obvious. Consequently, soldiers’ letters are no more reliable a source on what soldiers were really thinking than Shils and Janowitzs’ post-war interview data. In fact, an argument could be made that they were less reliable – Allied interrogators did not execute German PoWs simply for expressing pro-Nazi sentiments.

By contrast, historian Soehnke Neitzel unearthed original source material which allows analysts to gain a clearer understanding of the motivations of the German Army’s officers and men in World War Two. During the war, British intelligence made secret tape recordings of German PoWs of all ranks in order to gather militarily useful information. The PoWs, who did not know that they were being recorded, consequently freely discussed many subjects relating to the war and to their motivation. From these sources, Neitzel talks about:

“…the narrow role that ideology and abstract conviction play in the practical conduct of the war. The primary group, technology, space and time form the parameters around which the soldier’s life is oriented and which are important to him. In this dominance of his immediate surroundings what soldiers do is differentiated only in its existential dimension from that which people in a modern economy do all the time when asked to carry out a task. Even when one works for an energy company, an insurance company or a chemical firm the abstract concept of “capitalism” plays no role in one’s day to day work…Soldiers use violence to carry out their tasks in wartime. That is the only thing that separates their work from that of other workers, managers and civil servants.” (Neitzel 2012)

Explaining the continuing resistance the Allies encountered at the end of the war, for example, Neitzel cites the following taped conversation between two German officers:
“HEIM: Pfuhlstein, please do answer this one question which has always puzzled us beyond solution: what are the German people doing now? Why are they still fighting as they are?

PFUHLSTEIN: I will tell you why exactly – exactly is saying too much, perhaps. I went through the battle for Wertheim….The fact is that any man who runs away – there are regimental courts martial everywhere – anyone found in the rear is shot. Orders now are always worded as follows: ‘I order this and that. If it should not succeed, you will be shot’. The people know, therefore: ‘It’s no good retreating; I shall be caught and killed. Therefore I shall have to stay at the front and act as if I am fighting. I shan’t fight, because it’s pointless. I won’t open fire, or I might fire my rifle once or twice, but there’s no point in it. Perhaps I shall be wounded, a slight wound. That would be a stroke of luck’.” (Neitzel 2007)

Indeed, the widespread use of the death penalty by the Wehrmacht and the Waffen-SS against their own men at the end of the war hardly suggests that a collectivist mindset animated the ordinary German fighting soldier. The use and importance of the death penalty, however, is complex and will be discussed in greater depth below.

Neitzel’s work also reveals the prevalence of preference falsification in the German Army. Many officers and men whom the SS Security Service reported to have ‘correct National Socialist attitudes’ were vehemently opposed to Nazism in conversations in captivity when they did not know they were being recorded (Neitzel 2007).

Of course, the possibility of selection bias still exists with Neitzel’s sources. Although the German PoWs did not know they were being taped, they nonetheless were individuals who had surrendered, something which might tend to skew the sample away from those motivated principally by ideology. While it is impossible definitively to rule out this objection, it should be borne in mind that over 60% of all Germans who fought in World War Two eventually ended up in a PoW camp (Ferguson 2004) and that even fanatical Nazis such as Generals Ludwig Cruewell and August Ramcke were prepared to surrender when the situation was hopeless (Neitzel 2007).
Moreover, other sources also cast doubt on Castillo’s picture of Nazi Germany as a unified society with a collectivist ideology which allowed them to resist to the end. Richard Evans uses a variety of sources including SS Security Service reports to make the case that there was widespread anger amongst the German population that the Nazi leadership refused to surrender when the tide turned decisively against them. For instance, Evans cites the following conversation overheard by the diarist Victor Klemperer:

“When they (Germany’s leadership in World War One) saw that the game was up, they brought it to an end and didn’t let us go on being murdered. But these people! Just so they can rule for another couple of weeks.” (Evans 2008)

One explanation for why senior German military leaders wished to hold up the Allied advance was to give them time to move their enlarged wartime fortunes out of harm’s way. Norman Goda relates that many senior German Generals arranged to have their personal deposit accounts removed further and further from the frontline as the war came to an end (Goda 2000).

In fact Goda’s work on the bribery of senior German Army officers by Hitler should give pause for thought to any analyst who believes that the upper ranks of the Wehrmacht were principally motivated by a collectivist Nazi ideology.

Seeking to gain the support of the Wehrmacht’s Senior Generals, Hitler created a secret off-the-books fund known as Konto 5 through the Reichschancellory to pay out ‘special expenses’ to Senior Generals under the direction of Reichschancellory Chief Dr Hans-Heinrich Lammers. Over 40 million Reichsmarks were paid in such bribes to Senior Wehrmacht Generals such as Gerd von Rundstedt, Heinz Guderian and Erich von Manstein (Goda 2000). In addition, property taken from German Jews or conquered European nations and other discretionary gifts such as birthday checks for up to 250,000RM were also handed out to Senior Wehrmacht
Generals as personal gifts from the Fuehrer. Guderian, considered one of the finest tank commanders in history, was given an especially large captured estate in Poland by Hitler, a fact which was well known within Senior Wehrmacht circles at the time (Goda 2000). Hitler explained the logic behind his campaign of bribery to his personal adjutant Major Gerhard Engel:

“In antiquity, kings and emperors made large gifts to those who had done them some great service and the Prussian Kings were no less generous in this respect. That was a very clever business, for the more one honors a heroic deed or achievement, the more one is obliged, completely irrespective of his outlook…to the one to whom he is indebted for this honor. Thus the Fuehrer will also attach to promotions to the rank of Field Marshal and Lieutenant-General a tax-free financial honor…which shall amount to 4000 RM monthly for the rank of Field Marshal and 2000RM monthly for Lieutenant-General. When the war is finally won he will also not be tight fisted in the distribution of land….The Fuehrer does not demand from a General that he be a National Socialist, but he does demand….that politically he submit completely to the state leadership and blindly execute orders that the state leadership commands. This will be easier for each, even against inner conviction, if he has received corresponding honors, from the Chief of State and through this must feel automatically bound.” (Goda 2000)

If any members of the German Army were motivated to fight in World War Two by a self-abnegating collectivist ideology, it was certainly not the Wehrmacht’s Senior Generals.

Another difficulty with accepting culture and ideology as key determinants of German destructivity lies in timing. If we are to accept Castillo’s view that the Nazis were able to indoctrinate German troops into dying for the collective and for ideology, then we must ask how they were able to accomplish such a task so quickly. The Third Reich was in power for only twelve years. Only a tiny number of those who fought for it could therefore not remember anything else. In fact, as Evans points out, the majority of the troops who fought for Hitler were born during the First World War and grew up under the Weimar Republic (Goda 2000). Is not socialization and indoctrination, by contrast, supposed to occur in early childhood?
Finally, and contrary to Castillo’s suggestion (Castillo 2011), the Nazis never won the support of the majority of the German people – at least at the ballot box (Kershaw 2008). Substantial proportions of the German Army had therefore come from households which voted for non-Nazi parties. If one makes the counter-argument that the regime had somehow managed to erase old party loyalties by the time of the war, then one would struggle to explain why the Nazis’ political opponents were able to remobilize so quickly and gain so much popular support in West Germany after the war was over (Mann 1978). Quite simply, the view of German society as monolithically united behind Nazi ideology in World War Two is historically naïve.

Culture and ideology are not, then, the keys to German destructivity. Historians and political scientists who have made these elements the basis of their accounts of German fighting motivation have ignored genuine and pressing problems of preference falsification. Neitzel’s source materials are still imperfect but probably the best material available for understanding why the German Army fought. These materials, moreover, suggest that the original account of Shils and Janowitz, stressing the importance of primary unit cohesion, was in fact closer to the mark than grander accounts based on ideology or culture.

It is to this aspect of destructivity – fighting motivation – that I now turn.

6.6 Motivation

Punishment, by contrast, played a complex role in motivating the German Army.

The level of punishment varied over time, rank and type of offense. However, at no stage did the German Army use harsh negative incentives to overcome the moral hazard problem resulting from Auftragstaktik. As my theory predicts, harsh punishments were used to prevent
retreat in desperate, defensive battles where the line between shirking and fighting was clear, rather than in more ambiguous situations where a Junior leader may or may not have abused the license given to him by *Auftragstaktik*.

In World War One, one of the most striking statistics is that the German *Reichsheer* executed only 42 of its own soldiers. This is in comparison with a smaller British Army which executed over 300 (Vogel, Simon and Podlech 1981). In fact, for many decades leading up to World War One, the German Army had been on a progressive drive to lessen the harshness of its punishments.

The main impetus, however, for the leniency in German military law came from the democratically elected Reichstag, which under the 1871 constitution had the right to vote on the military penal code. The Reichstag, unlike the House of Commons at the time, was elected through universal manhood suffrage. By World War One, majorities in the Reichstag were held by left and center left parties such as the Social Democrats (SPD) and the Catholic Center Party. These parties represented the interests of middle and working class conscripts against the Prussian officer corps and worked to ensure that soldiers accused of military offenses were given strong protections under the law. For instance, deserters from the Imperial Army could only be executed for a second offense. They also had the right to be represented by a qualified lawyer, a right not extended to their counterparts in the British Army (Jahr 1998).

While this relative clemency worked for the majority of the war, there is nonetheless evidence that by 1918, that German discipline was breaking down. In fact, historians such as Niall Ferguson and Alexander Watson put the German defeat in the Hundred Days’ Offensive,
which ended the war, down to a mass outbreak of surrenders amongst ordinary German units. Ferguson notes that:

“It was those Germans who opted to surrender, or desert, shirk or strike, who ended the war.” (Ferguson 1999)

Accounts by Allied soldiers note whole platoons of German troops surrendering to far smaller groups of Allied forces. In one particularly striking instance, one Canadian captain- GB McKean- advanced on a large group of German soldiers. McKean charged the largest German soldier, who dropped his rifle and ran for his life. McKean continued:

“This was the deciding act, a cue to the rest of the Huns. Their rifles clattered noisily as they threw them as far away from them as possible, then scrambled out of the houses and footed it for all they were worth! I was soon in the midst of a mob of fleeing Huns…Seeing the tall one running wildly back towards our lines, the majority of the Germans promptly turned round and followed him…At least fifty Huns went past us. Looking around I could see, at a distance, scores more of them making frantic efforts to get away.”

McKean then came face to face with a German captain who, rather than resisting, cooperated in rounding up the rest of the Germans to surrender:

“He smiled genially and pointed down the dugout entrance. I looked down. It was too dark down there to see anything, but I heard the murmur of many excited voices. I motioned to the captain to bring them up. He assented with a smile, and very soon the Huns started trooping out…Altogether we collected well over one hundred prisoners.” (Watson 2009)

By contrast, British units in the German offensive of the previous spring had offered stiffer resistance. Behind the lines, group shirking or mutiny became relatively widespread in the units of the Heer. Revolutionary socialist “Soldier’s and Sailor’s Councils” were established which refused to carry on the fight with the Allies. German staff officer Erich-Otto Volkmann calculated after the war that up to 1 million German soldiers were ‘shirkers’ in the final months of the war – either deserters or men who surrendered without a fight (Watson 2009). Volkmann’s
figures were disputed, but more recent historians have estimated the total number of deserters from the German Army at the end of the war to be as many as 200,000, with another 385,000 known to have surrendered to the Allies (Watson 2009). Ludendorff and many others on the German right attributed this to the leniency of the Imperial German military penal code (Oram 2003).

Hitler agreed. Appalled by the greater leniency of the Kaiser’s Army and was determined to ensure that if he came to power in Germany, the trend towards more humane military justice would be reversed. In a passage from Mein Kampf which, in the very final months of the war, came to be hung around the necks of German soldiers executed for desertion, Hitler stated:

“If you want to hold weak, cowardly fellows to their duty, there has at all times been only one possibility: the deserter must know that desertion brings with it the one thing he wants to escape. At the front a man may die, as a deserter he must die!” (Hitler 2003)

Unlike Churchill or even the Kaiser, Hitler had no legislative constraints against increasing the severity of military punishment. The Wehrmacht’s penal code was rewritten to become more severe and to give ever greater scope for officers to use harsh punishment on their men during the Third Reich. For instance, the 1936 edition of the Penal Code stated:

“Desertion in the face of the enemy or from a besieged position is punishable by death.

“The same punishment is due to any deserters who go over to the enemy” (Gesetzbuch der deutschen Wehrmacht 1936)

Yet it would be equally mistaken to view the increased use of the death penalty for desertion as the secret to the Wehrmacht’s skill and high levels of initiative. In the most successful years of the war for Germany – 1940-1941 - only 447 German soldiers were sentenced to death from an Army of over 3 million. The following year, when the tide began to turn against
the Axis and the war moved to a defensive phase, 1,673 death sentences were passed. 1942-1943, when the Allies decisively turned the tide of the war, saw 2,769 death sentences, while 1943-44 saw 4,118. Ingo Mueller points out that the statistics on executions stop there, but that ‘it is almost certain that in the struggle for final victory (in 1945) the number doubled yet again” (Mueller 1991).

Tragically, the harsh punishment regime adopted by Hitler worked in reducing the most obvious forms of military shirking. The principal benefits which the high level of negative sanctions Hitler employed were twofold.

First, in desperate defensive fighting against the Red Army, it is quite plausible that the brutality of Nazi military justice combined with the extremely poor treatment of German prisoners by Stalin combined to keep German troops’ resistance high. Omer Bartov has argued that the high losses sustained by many German units in the USSR over the period 1942-44 led to the disintegration of the primary group. The peer approval motive for fighting was thus weakened. Yet at the same time, German PoWs in Soviet hands had a very high risk of death – 1 in 3 (Ferguson 1999). Similarly, as can be seen from the figures above, desertion would almost certainly lead to capture and execution by the Wehrmacht’s court martial system. Consequently, standing and fighting represented the least dangerous option for an average German soldier in the crucial defensive battles of the Eastern front. The fact that German troops fought defensive battles with dogged determination against the Soviets once the tide of the war had turned in the East is thus at least partly due to the harsh negative sanctions the Wehrmacht employed. Even against the Western Allies, German troops offered stiff resistance after having been cut off. Although German PoWs had a good chance of survival in British or American captivity, if they were
captured unwounded and then recaptured by German forces, they faced and in some cases received the death penalty.

Second, at the end of the Second World War, however, even the smallest expression of opposition to the Nazi regime would result in a swift execution on the charge of “Wehrkraftversetzung” (Mueller 1991). Consequently, organized group shirking among the enlisted men in the final months of the war was unable to get off the ground in Nazi Germany (Evans 2008).

Harsh negative sanctions, in short, helped the German Army maintain its resistance to the Allies after the tide had turned, and prolonged the war in comparison with World War One.

However, analysis of the Wehrmacht’s court records shows that execution was used only under certain very particular circumstances. While the offenses for which it was used could be absurdly trivial, especially towards the end of the war, they usually did require clear evidence of actual shirking rather than poor luck. Rarely were they used as a punishment for commanders who had exercised independent judgment but failed in their tasks.

Execution was used mostly for enlisted men who had clearly breached military discipline. Both Wehrmacht and Waffen-SS men were issued with identity cards and when on leave or out of the front line had to report to their local commands within 48 hours of arriving home and there existed a sophisticated system for controlling the flow of troops between the front line and the rear echelons (Gelwick 1971). Thus in many cases the distinction between desertion and simply following one’s own initiative was fairly obvious. Wolfram Wette and Detlef Vogel, for instance, produced a large compendium of typical death sentence cases for treason in the Wehrmacht, and
legal history expert Manfred Messerschmidt exhibited others in his comprehensive study of Wehrmacht military justice.

Although unfortunately the data are not broken down by rank, or by reason for execution (other than the basic and rather uninformative categories ‘desertion’ and ‘undermining morale’), there are no instances cited of Junior Officers being executed for simply failing to achieve their broadly defined tactical goals. Instead, the majority of cases revolve around young, enlisted men executed for leaving the frontline without permission, self-harming, listening to Communist “Free Germany” broadcasts, or theft (Messerschmidt 1987). To cite one example given by Messerschmidt, a Sudeten German former Corporal, who had been released from the Wehrmacht in 1942 as he was the sole survivor of three brothers, was recalled to service in December 1944. The Corporal, named Josef Ha., had an excellent previous war record but on this occasion attempted to escape further service by shooting himself in the leg, was found out, condemned to death and executed on February 8th 1945 (Messerschmidt 1987). Another case described in detail by Messerschmidt revolves around a Panzergrenadier (equivalent to a Private) Franz S, who had served for two and a half years on the Eastern Front. He was wounded and then discharged to a reserve unit different from the one in which he had previously served. Not fitting in with the new unit, he left and returned to his mother in Vienna and attempted to rejoin the Red Cross for which he had volunteered before the war. Here he was arrested, condemned to death and executed in late 1944 (Messerschmidt 1987). In another case, 9 enlisted men aged 18-22 who had deliberately wounded themselves to avoid fighting were executed along with 5 civilians who had helped them in February 1945 (Messerschmidt 1987).
On the other hand, sentences could be commuted from death to a short spell in prison if the accused were judged to have used his own judgment in the best interests of the Army, but simply made a mistake (Messerschmidt 1987).

There is no question that military discipline in the Wehrmacht was extremely brutal, that the circumstances under which a soldier could be sentenced to death were deliberately vague and open to a very expansive interpretation, and that consequently executions could occur for very minor infractions of military law3.

It was not, however, the key to German fighting power in the early twentieth century. It was not necessary for German fighting skill, or the German command philosophy, known today as ‘Auftragstaktik’. For Auftragstaktik, in fact, long predated the onset of harsh negative sanctions under Hitler, and had been entirely compatible with the more liberal regime of the Kaiser.

This doctrine in fact gives high priority to the exercise of initiative. Indeed, historians such as Martin Samuels and Jorg Muth see this philosophy as the key to the German Army’s success (Samuels 1995; Muth 2011). “Auftragstaktik” refers to a command philosophy which recognizes that Senior Officers cannot plan military operations in minute detail and so must instead set broad objectives for their subordinates to achieve as they see fit. This clearly requires a high degree of trust on the part of the Senior Officers in the motivation and skill of the Junior Officers. The determinants of skill will be dealt with below. Here however, I propose to answer the following question – how did the German Army provide the motivation for Junior Officers to

3 Messerschmidt notes that stealing from Wehrmacht postal services was also a capital offense, and notes the case of many soldiers executed for stealing woolen socks and scarves during the first winter of Operation Barbarossa. Messerschmidt (1987)
implement a command philosophy which, in the wrong circumstances, could give license for industrial scale shirking?

For one, Auftragstaktik explicitly recognizes the right of a Junior Officer to refuse to obey orders if they conflict with his understanding of the situation on the ground. For many years, a favored story of German officers was that of a Junior Officer who had committed a tactical blunder and was being reprimanded by the Prussian Crown Prince. The Junior Officer replied that he was merely following orders, to which the Crown Prince replied – “His Majesty made you an officer because he believed you would know when not to obey his orders” (Dupuy 1978).

This principle was made firmly understood amongst German Army officers prior to World War One – in all editions of the tactical training manual written by the Army’s famed chief of staff Helmut von Moltke, he stated:

“A favorable situation will never be exploited if commanders wait for orders. The highest commander and the youngest soldier must always be conscious of the fact that omission and inactivity are worse than resorting to the wrong expedient” (Dupuy 1978)

Similarly, a popular article on ‘the Art of Command’ written by a German colonel shortly before World War One, stated that:

“Modern fighting requires thoughtful leaders trained to be independent…Such leaders…..are not produced by orders, superfluous in themselves, and besides the mark; but we undoubtedly do get them if we give no more orders than are absolutely essential, and if we praise every independent action, even if it be not altogether apt or appropriate” (Samuels 1995)

Although, as with many of his writings, Hitler’s views are often self-contradictory, Mein Kampf does in fact include some passages which indicate a rudimentary awareness of these principles. For instance, Hitler wrote that:
“Anyone who demands of fate a guarantee of success automatically renounces all idea of a heroic deed. For this lies in undertaking a step which may lead to success, in full awareness of the mortal danger inherent in a state of affairs.” (Hitler 1943)

Indeed, in the early successes of the German Army in conquering Europe, Hitler was to apply this principle in a manner which would surprise many students of autocratic regimes. In the 1940 invasion of France, for instance, Hitler gave direct orders to General Sepp Dietrich of the Waffen-SS to halt at a particular canal. Dietrich, however, defied the Fuehrer’s orders and continued the attack. For this (admittedly successful) insubordination, Hitler showered Dietrich with honors (Ripley 2004).

Further down the chain of command, the principles of Auftragstaktik were also put into practice. Muth cites the pre-invasion speech to his subordinates by Lieutenant General Heinz Guderian, stating that they had a ‘ticket to the last station (the French coast)’ and that how they got there was up to them. Even further down the line, Muth cites Colonel Kurt Zeitzler, who declared to his subordinates – “Gentlemen, I demand you cross the French border, cross the Belgian border and cross the River Meuse. How you do it is up to you”.

Let us consider now how this works out in terms of the motivation of Sergeant Meyer. He is tasked with capturing a Belgian fort but his glider has fallen short and he faces an apparently insurmountable obstacle in the shape of the canal. He has, however, now noticed the way round the side. His superiors cannot punish him for not taking advantage of this way round. They could of course punish him for not taking the fort, but consider this set of calculations. If he takes the way round the side, he could still fail in his objective, or be killed or injured. If he does choose the way round and fails, he may be punished all the more harshly because his superiors have been

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4http://ricks.foreignpolicy.com/posts/2011/09/09/an_elusive_command_philosophy_and_a_different_command_culture
unable to tell if he actually was even trying to take the objective. If, however, he launches a frontal attack, it will probably fail, but at least it will look to his superiors as though he is trying. Thus, if his Senior Officers attempt to motivate him to take the objective through harsh punishments, he will be tempted to rely on easily observable but in the long run less effective tactics. Sergeant Meyer must, therefore, be motivated by positive inducements and there must be some margin for error if he uses his initiative but things simply do not work out.

Consequently, the positive incentives the German Army could offer would now come into play. For officers of the German Army from the early nineteenth century until 1942, promotion went by a mixture of seniority and annual efficiency reports (Hughes 1987). Conditional on good efficiency reports, officers should be able to expect promotion after a certain amount of time served. Consequently, a Senior Officer knew that officers would have an incentive not to abuse the freedom granted by the Auftragstaktik command philosophy. At the same time, the longer time horizon of the efficiency report would give the Senior Officer time to separate out the effects of bad luck and genuine shirking. NCOs, who frequently commanded small formations in the German Army, could expect a statement of guaranteed lifetime employment in the state bureaucracy after twelve years’ service conditional on satisfactory efficiency reports from their officers— the Zivilversorgungschein (Samuels 1995).

This was, as my theory predicts, supplemented by a system of peer monitoring and esteem granting among soldiers, which even extended back to the home front. Neitzel claims that for German troops the desire to be recognized by one’s fellow soldier as a brave and competent professional was the key factor in motivation (Neitzel 2012). Soldiers relished the ability to tell their comrades stories of heroic accomplishments against the odds. For instance, Neitzel cites an
airborne officer, Major Frank, who told his fellow PoWs with relish of his capture of a village during the Battle of the Bulge in spite of the deaths of his most able Lieutenants and lack of air and artillery support (Neitzel 2012). Neitzel also points out how tales of the valor of various officers would spread through the Prisoner of War camps – “Did you hear about Colonel Bacherer, winner of the Knight’s Cross?” (Neitzel 2012). Conversely, prisoners with a less distinguished record feared shame once they returned home. For instance, a Junior Lieutenant captured by the British in North Africa gave vent to the fear that:

“When I get home people will laugh in my face. I was taken prisoner unwounded and I have not won any medals.” (Neitzel 2012)

For as the incidents related by Pfuhlstein above make clear, without positive incentives too, German soldiers could always be tempted to do the minimum necessary to avoid being court-martialed and shot while still avoiding serious fighting. In order to provide German Junior leaders with the motivation to continue to fight with initiative and skill after the tide turned against Germany, Hitler revamped the German Army’s promotion structure.

In late 1942, against the advice of traditionalists in the Wehrmacht Personnel Administration Department, Hitler intervened to bring the Wehrmacht’s promotion policy into line with that of the Waffen-SS in that men could be promoted immediately on the grounds of a heroic battlefield accomplishment. Seniority and educational requirements for promotion into and through the officer corps were abolished. This was the only time Hitler made any changes in the Wehrmacht’s personnel policies in his years in power and it was to increase the importance of military achievement (Knox 2000).

Consequently, by the end of the war, both officers and men in both German military organizations knew that an act of supreme battlefield bravery could lead to immediate promotion
with high prestige and perks. McGregor Knox speaks of the immense ‘professional and social ambition’ which Hitler’s reforms unleashed and credits them with significantly prolonging the war (Knox 2000).

The tenacity of the German Army’s resistance in the latter years of the war, therefore, sprang from a starkly effective incentive scheme. Firing squads to prevent outright desertion or mutiny on the part of reluctant enlisted men combined with steep promotion for those prepared to go beyond the minimum and fight with initiative and courage.

Thus the record of the German Army’s fighting motivation bears out the predictions of my theory chapter. Harsh negative discipline was not necessary for initiative. Rather, the solution to the moral hazard problem posed by Auftragstaktik lay in peer monitoring and social sanctions among lower level German leaders. Negative sanctions were important – especially in stiffening German resistance in the final years of World War Two in desperate defensive battles. Although executions were commonplace, they were used only in relatively clear-cut cases of ‘shirking’. Ambiguous cases of lower level leaders being executed when they claimed simply to have been using their initiative are not to be found. Moreover, Auftragstaktik had not required extensive use of the death penalty to operate in the First World War.

However, peer monitoring solves only part of the problem of destructivity. It can inspire troops to risk their lives, but not necessarily to fight with skill. The determinants of skill are quite different and will now be explored.

6.7 The Funnel
The system of training for officers and NCOs of the early twentieth century German military attracted widespread admiration from contemporary military observers and has been widely praised for giving the German Army the knowledge and skills to be able to demonstrate initiative in the field (Muth 2011).

The training and promotion systems of the German military can be broken down into four phases – the Imperial Reichsheer under the Kaiser, the Reichsheer of the Weimar Republic, the Wehrmacht of the Third Reich and the Waffen-SS. All however had certain similarities. Aspiring officers and NCOs had to invest significant time and effort in acquiring military skill in order to beat the competition for coveted promotions. Career paths in these forces contained numerous critical points at which those who had done well in acquiring military specific skills would advance rapidly and prosper whilst those who had not would either advance more slowly or be obliged to leave the service entirely. These critical points consisted both of theoretical written examinations and of practical probationary periods in the service.

For some of the officers in the Imperial Reichsheer, entrance into the military would begin at age 11 with an application to join a cadet school or Kadettenhaus. Entry into this school was by a competitive test which included a test of basic literacy and numeracy. The Kadettenhaus provided a primarily general education but with a focus on the military – however, the standard of schooling was lower than in a civilian Gymnasium. For instance, the civilian Abitur was introduced only in 1882 and was still not compulsory for cadets by the First World War (65% of Kadetten sat the Abitur by 1912) (Muth 2011). The primary focus of the Kadettenhauser was to prepare students for the Officer Entrance Exam – the Fahnrichsprüfung.
The second point of entry into the Fahnrichsprufung was through the civilian Gymnasia or grammar schools as an “Einjährige Freiwilliger”. These volunteers would need to have passed the Abitur and would serve as an NCO for 12 months. If they satisfied their superiors in this time, they would be permitted to sit the Fahnrichsprufung along with the candidates from the cadet schools (Samuels 1995).

The Reichsheer’s traditional system of promotion by seniority has been criticized by many historians. However, this is to misunderstand the function of the system and the effects it had on the incentives of officer candidates to acquire military-specific skills. Specifically, the promotion by seniority system gave young officers strong incentives to master military skills so as to do well in their exams and probationary periods, which would gain them crucial years of seniority. For instance, in the Fahnrichsprufung, the top performing candidates would be commissioned immediately as Lieutenants, while the middling candidates would be commissioned as Second Lieutenants, promoted to Lieutenant after one year on condition that they received satisfactory recommendations from their commanding officer. The bottom 10% of the class would join the Army as NCOs, from where they could in future be promoted into the officer corps, but after a longer period in the ranks than those who were commissioned as Second Lieutenants. The importance of either gaining or losing vital years of seniority in this way created frantic competition among applicants in studying for the Fahnrichsprufung. John Moncur, who studied the cadet schools intensively, relates that students would work into the small hours for months in advance of the exam (Moncur 1993).

Once the officers had passed the Fahnrichsprufung, promotion went by seniority conditional on good efficiency reports from superior officers. After three years, however, all
officers had the opportunity to gain a place on the Staff Corps – the *Grosser Generalstab* – which functioned as an accelerated promotion scheme and offered a hefty pay rise. Entrance to this corps involved a competitive exam for entrance to the War Academy (the *Kriegsakademie*). Given the rewards in increased pay and accelerated promotion, there was a huge pool of candidates - 1,000 applicants for 130 places on this Academy by 1913. The examination consisted of eight papers- one paper on artillery and small arms tactics, one on fortifications, one on topography, one on history, one on geography and one on either French or mathematics. As my model would suggest, the high level of competition for places generated high incentives to work hard in mastering these skills – candidates were known to hire ‘crammers’ who would help them rote memorize answers to particular kinds of questions. However, as the General Staff wished to encourage independent, flexible reactions, they penalized any candidate known to have used one. Another means used by ambitious German officers to get ahead in the competition to join and remain on the General Staff were popular ‘brain teasers’ on military problems in Officer’s magazines such as the *Militarisches Wochenblatt*. These problems would develop analytical skills by showing an abstract military challenge (say, an assault on a hill fort) and ask for suggestions as to how to overcome it (Muth 2011).

At the end of the examination, officers had to be in the top 20th percentile to be admitted to the General Staff. However, the incentives for continuing to master military skills did not stop once one was in the General Staff – candidates were required to resit the entrance exam every year for four years in order to remain on the staff.

Lower down the hierarchy, the German Army recognized that modern war made a good NCO corps essential. As the Infantry Training Manual of 1906 made clear:
“The NCO supports the officer and must step in for him if necessary. On his dependability rests the cohesion of the troops…The NCO is the backbone of the Army.” (von Ledebur 1939)

German NCOs were thus put through a system of training and promotion every bit as rigorous as that of the officers.

The Kaiser’s Army recruited NCOs in two ways – first, boys from humbler backgrounds than the cadets were given the option of going to an “Unteroffizier-Schule” – a professional training school for non-commissioned officers. They first attended an ‘Unteroffizier-Vorschule’ from 14 to 17, which would provide a general education with a special emphasis on physical development and then at 17 to the “Unteroffizier Schule” where they would receive a further two years of specifically military education.

Finally, the enlisted men consisted exclusively of conscripts on two years’ national service (van Creveld 1998). These men had less of an incentive to master military skills given that they expected to return to their civilian life on completion of their service. However, conscripts who had impressed their commanders could be persuaded to remain in the Army as NCOs once their term of service as a conscript had ended. These NCOs- termed Kapitulanten- would be taught every winter for up to four years by civilian teachers and retired military officers. Subjects taught included military and general subjects such as German, basic mathematics, geography and history. At the end of each year, the NCO applicants would be made to sit an exam. Performance on the exam would entitle one to be placed in either the first or second class (Stufe I or Stufe II), which influenced subsequent promotion (von Ledebur 1939). In return for this, once their 12 years as an NCO were complete, they too would be entitled to a
‘Zivilversorgungsschein’ in the same way as those who had come up through the Unteroffizier Schuler (Samuels 1995).

The end of the First World War marked significant changes in the operation of the German Army’s training and promotion system. The Allies recognized the contribution which the German officer training system had made to German destructivity and consequently abolished the Kadettenhäuser and the Unteroffizier Schuler under the Treaty of Versailles (the Reichsheer, however, partly circumvented this by establishing Kriegschüler similar to the Cadet Schools outside Allied oversight). The Allies also restricted the German Army to 100,000 men and forced the Germans to abolish conscription (Corum 1992).

However, the Chief of Staff of the inter-war Reichsheer, General Hans von Seeckt, devised a number of methods to work around the Versailles restrictions while increasing, rather than lowering, the standards of training.

The Versailles treaty put restrictions on the size of the officer corps, but none on the number of NCOs permitted. Consequently, the trend in the German Army for NCOs to take on the tasks of officers, already in evidence before World War One, intensified. The inter-war Reichsheer thus had the largest proportion of NCOs of any Army in the world. These NCOs, moreover, went through a training system of far greater intensity than any contemporary counterparts. A private could first become an NCO after three years’ exemplary service in the ranks by taking the NCOs probationary exam, after which he would become a lance-corporal or Gefreite. As a lance corporal he would undertake further intensive training, after which he could expect to be made a sergeant or Unteroffizier after four years of further service. Then, after another two years, he would be promoted to staff sergeant or Unterfeldwebel. Then, to become a
senior NCO or *Feldwebel*, a further examination was necessary (Corum 1992). After completion of this exam, it was possible to be promoted to a commissioned officer rank. (Corum 1992) A *Feldwebel* in the meantime was also expected to be able to command platoons without direction by an officer (Corum 1992).

Indeed, the small size of the officer corps needed to lead the 100,000 man Army which Germany was obliged to have by the Treaty of Versailles allowed the German military to be even more selective about the candidates it would accept. In fact, the training program of the Reichsheer under von Seeckt was described as ‘one of the most strenuous officer training systems ever devised.’ (Corum 1992)

First, each officer candidate received the same six months training which an enlisted man would receive. They would then spend a year with a regiment as enlisted men in the morning, and receiving training in the afternoon in classes taught by the regiment’s officers. Towards the end of the year, they would serve as a junior NCO section leader. After one year with the regiment the candidate would be promoted to corporal. After three months as a corporal, he would be promoted to sergeant and sent to the branch school for his Officer Entrance Examination (still called the *Fahnrichsprüfung*). After these examinations, he would receive six months instruction in various military subjects – tactics, aerial warfare, signaling, motor technology, mapping, camouflage, riding, civics and foreign languages along with athletics. Then the candidate would sit another intermediate examination of military and civilian subjects. This examination, according to Corum, was extremely difficult. He cites the statistic that 27 candidates failed it, although it is not reported how many took it. Even then, however, the officer training was not finished.
A second year of instruction was then spent at branch specific schools for cavalry, artillery, signals, pioneers and transport troops. In addition to heavily military specific training, candidates were taught how to drive motor vehicles and motorcycles. At the end of this year, more examinations were administered over a six-week period, including orals. More candidates were failed at this stage.

The remaining candidates were sent to their regiments to serve for a few months as platoon commanders. They also continued to receive instruction including lectures, staff rides and foreign language lessons. At the end of this last phase, they had to be approved for service by regimental officers and the colonel of the regiment. If regimental officers, having observed the candidate’s performance as a platoon leader, expressed reservations about his fitness to command, the case would be referred to the Minister for the Reichswehr in Berlin. If the candidate passed through this final stage, he would at last be commissioned as an officer in the German Army (Corum 1992).

Von Seeckt also secretly re-established many of the institutions, such as the War Academy for entrance into the General Staff, renamed the Truppenamt (Troop Office), which had existed under the Kaiser. Like the pre-war General Staff, this offered accelerated promotion for successful candidates. In the 1920s, the ratio of applicants to places had again reached the 8 to 1 ratio known before the War (Kane 2004). Consequently, competition and hence the incentives to acquire military skills were once again high.

The effects of both the Kaiser’s and the Weimar Republic’s system of training continued to make themselves well into the Third Reich. For instance, the Senior Officers and trainers of the Weimar Republic’s Reichsheer had all come through the Kaiser’s training system, as did many of
the Senior Officers of the Wehrmacht and the Waffen-SS (Ziegler 1989; Mitcham 2008). When Hitler embarked on the rearmament of Germany in the 1930s, he relied on Imperial Officer Corps veterans to train the incoming Wehrmacht officers. Hitler himself remarked, in fact, that Nazi Germany had a ‘Royal Prussian Army’ (Demeter 1965). Even the Waffen-SS, which some see as representing a break in German military history, relied heavily on Reichsheer veterans for initial officering and training – for instance, the establishment of the Waffen-SS’s training schools and curricula was entrusted to Paul Hausser, a graduate of the Berlin cadet school and the Reichsheer’s War Academy and former member of the Imperial General Staff Corps (Ripley 2004). Nor was Hausser an outlier, for as Herbert Ziegler’s research has shown, former Army Officers were significantly overrepresented in the higher echelons of the Waffen-SS, mostly because their professional military skills were highly in demand (Ziegler 1989). Moreover, the German Army’s high levels of training continued under the Third Reich.

When Hitler assumed power, he began to expand the Wehrmacht rapidly. The demand which this created for officers did lower the standards somewhat relative to previous years – a major bone of contention between the Wehrmacht’s senior leadership and Hitler. Nonetheless, this was a problem for all major militaries of World War Two, which had to maintain standards while expanding from a peacetime to a wartime mass conscript Army (as we shall see with respect to Britain). Germany, however, was able to maintain a relatively high level of competition in skill acquisition and a fine grained and relatively professional system of recruitment and promotion in both the Wehrmacht and Waffen-SS, similar to that which had pertained in the 

Reichsheer.
The Wehrmacht initially maintained a recruitment, selection and training system which was also very similar to that of the former *Reichsheer*. Candidates from the *Kriegschuler* competed with qualified conscripts for places on the officer corps. The *Kriegschuler* taught young candidates military specific skills, apparently to a higher degree than the old Cadet Schools. Aspiring officer candidates were compelled to go through four competitive stages prior to becoming officers – *Fahnenjunker-Gefreiter, Fahnenjunker-Unteroffizier, Fanrich* and *Oberfahnrich*. As in the Imperial Army, those who had not performed well enough on the *Fahnrichsprufung* to gain a commission could remain in the Army as an NCO. Again, as under the Weimar Republic and the Kaiser, good officers could apply to study at the re-opened War Academy for entrance to the General Staff Corps. Students at the General Staff Corps’ time was divided in the following manner – six hours per week on tactics, four on military history, one in engineering, one on tank forces and one on air forces in the first year. In the second year, the course remained the same with the exception of an additional hour of lectures on logistics. In the third year, students received an additional day’s worth of lectures on tactics plus another six hours spread across the other days. They also spent four hours of lectures on military history, one hour on logistics and one hour on air forces. In the winter, the candidates were assigned a block of special tactical instruction in addition to this, plus a summer assignment to a combat arms branch other than his own so as to gain combined arms experience. In addition, students were also given practical instruction in handling barbed wire, anti-tank mines, dynamite and various types of machine guns. In short, the training featured heavily military specific skills acquisition and very little political indoctrination. Students had to sit major exams every week, and intense individual study was said to be common, as in the Imperial Army. Also similar to the *Reichsheer*, students
were discouraged from rote learning and were encouraged to think for themselves (Mitcham 2008).

Competition for advancement through acquiring military skills was again high as it had been under the Reichsheer. For instance, Jorg Muth reports that the acceptance rate for the newly re-established General Staff Kriegsakademie was only around 10-20% even in the late 1930s when the German Army was undergoing rapid expansion (Muth 2011). The skills acquired by officers in order to attempt to gain entrance to the Kriegsakademie could nonetheless be expected to diffuse through the whole officer corps, given that all officers were expected to at least try to sit the entrance exam. As Muth explains:

“A German officer, if he wanted to rise, had to be constantly on his toes and advance his knowledge in between attendance at schools. Therefore a Fahhrich had better have done his homework before he went to the Kriegsschule (basic officer training school for the Wehrmacht), a Leutnant before he even went to the Wehrkreisprüfung (entrance exam for the Kriegsakademie), and an Oberst when he was selected for the higher level war games.” (Muth 2011)

The Waffen-SS’s promotion and training policies were based on those of the Wehrmacht, which in turn derived from those of the Reichsheer. Efficiency reports, which were issued annually, played the same role as superior officers’ recommendations had in the Imperial Army.

As with other German military formations, there were many routes of entry into the Waffen-SS Officer Corps – normally, candidates would be taken from the SS-Junkerschuler (the equivalent of the Kadettenschuler) established by Hauser and on successful graduation would be commissioned as a Lieutenant or Untersturmführer. However, NCOs and enlisted men could also win promotion to Untersturmführer through exceptional conduct in the face of the enemy. From Untersturmführer onwards, two years’ service would normally see a candidate apply to be promoted to Obersturmführer, a further two and a half years to Hauptsturmführer, three years
to *Sturmbahnfuehrer*, four to *Obersturmbahnfuehrer*, and a further four to *Standartenfuehrer*. At any stage, however, exceptionally meretricious conduct on the battlefield could allow a candidate to skip usual seniority requirements and be promoted straight away (Gelwick 1971). SS Reserve Officer Candidates had to complete twelve months of service at the front and be recommended by their commanders for attendance at an SS reserve officer school. If the course was completed successfully, the Candidate would be promoted to Reserve *Oberscharfuehrer* (Sergeant). The candidate would then return to the ranks and after further service and satisfactory recommendations from his superiors would be promoted to *Untersturmfuehrer* (Gelwick 1971).

Training was deliberately exacting and rigorous. In 1943, when Reichsfuehrer-SS Heinrich Himmler believed that standards had dropped too far, he instituted an additional preliminary two month course prior to attendance at the SS and Reserve SS Officer Schools (Gelwick 1971) to weed out less capable candidates. Reports by the Inspector of the *Junkerschuler* in 1939, suggest that on average in the late 1930s, around 40% of candidates failed the course (Wegner 1982).

In short, then, the early twentieth century German military officer corps’ recruitment and promotion structure closely mirrors the ideal funnel my theory chapter outlines. Exams and probationary periods were fiercely competitive. Individual officers had strong incentives to work hard on mastering military skills so as to gain promotion or seniority, or in some cases even remain in the service at all.

It is hardly surprising that military historians such as van Creveld, Muth and Samuels view this funnel as the key to the German Army’s high levels of skill. Yet military historians do not push the causal arrow back much further beyond describing the manner in which the system
operated. They do not explore what allowed Germany to recruit and retain such a large number of candidates required to make this system work. They do not explore the intriguing similarities between this system of recruitment and promotion and that which pertained in German industry at the time (and today). Nor do they explain why other states, knowing fine well that the German system of training was giving Germany a significant edge over its foes, did not also adopt such a system. For analysts such as Samuels and Muth, the inability of the British or Americans to adopt this rigorous system of training lies in some kind of cultural failure (Muth 2011) or simply a long-running series of mistakes by British and American military and political leaders. While this may be true, it is unlikely that these mistakes would be repeated again and again over several decades in spite of mounting evidence to their cost – according to Muth, the modern US Army still today has not reached German levels of skill (Muth 2011). I suggest by contrast that structural factors related to the economic and labor market institutions of the British and American economies on the one hand, and the German on the other, are in fact crucial.

To understand, then, the factors which allowed Germany to maintain such an extensive, competitive and fine-grained system of training and promotions, it is necessary to return to the funnel game which I outlined in the theory chapter.

For one, in order for such a tough and demanding training system to operate effectively, there needs to be a broad funnel of recruits. In order to be able to credibly commit to expelling officers who fail exams or do poorly in probationary periods, there has to be somebody to take their place. In order to get officers to take exams seriously, there have to be many individuals competing for limited places. Hence a good training system requires a good recruitment system. As an interwar German author put it:
“The huge throng of people (Andrang) wishing to join the Reichsheer makes it possible to maintain a policy of strict selection right at the start and to expect high physical and personal abilities from applicants right from the beginning…No one who wishes to be a soldier can just start studying overnight, rather he must prepare for his future profession for years.” (Benary 1931)

Clearly, Germany had a good ability to recruit people into the officer and NCO corps – whether that was in the Reichsheer, the Wehrmacht or the Waffen-SS. The Reichsheer was already weeding out 50% of candidates for the Kadettenschüler at the age of 11. In early adulthood, there were as many as 20 applicants to one place on the “Einjährige Fahnenjunker” scheme in 1912 (Samuels 1995). Later in time, the Weimar’s Reichsheer had fifteen applicants for every one officer or enlisted position (Corum 1992). For their part, the Waffen-SS aimed at accepting only approximately 18% of eligible applicants for positions in the Corps, of which a smaller proportion could then be promoted to the Officer Ranks (Rohrkamp 2010).

The question is – why was Germany able to attract such a large number of recruits into the military?

As we have seen, the answer to this question does not lie in better pay and pensions. Rather, German economic structure provides the key.

Let us consider the position of a young German boy and his family considering potential careers in the early twentieth century. With universal literacy across the population, it would be imperative for the family to push their son into acquiring a basic education at an early (pre-11) age. One would have been able to function in very few walks of life without literacy – even very small eastern Prussian landowners would have had to run their agricultural businesses with a modicum of efficiency. In spite of agricultural protection, strong American and Russian competition endangered the estates of the Prussian Junker aristocracy (Carsten 1989). At the same
time, following the reforming mid-19th century legislation, non-nobles were permitted to buy land in Prussia, opening the possibility that inefficient estates could be bought out and disposed of (Carsten 1989).

However, crucially, even literate young men faced high barriers to entry to many of the most prestigious and lucrative professions. Germany professional associations were very powerful and used this power to keep entry tightly regulated (Iversen and Soskice 2009). The training required to enter many professions was therefore very costly to acquire. The key civilian competitors to a career in the military included the civil service, the medical profession, the clergy, the law and business.

Should this hypothetical German family have chosen to send their son into the law (a qualification necessary for both the legal profession and the civil service), at the turn of the century the total cost would have been approximately 25,000 marks, and the son would not have begun receiving pay until the age of 28. For the medical profession, the cost would have been approximately 18,000 and even for the church, professional education in Germany would have set the family back some 15,000 marks. By contrast, the tuition in a cadet school in total amounted to approximately 6,000 marks, for which one could receive a large amount of financial aid, if one’s father had also served. The son would also begin receiving pay between the ages of 18 and 20 (Hughes 1987).

Much evidence suggests that these considerations heavily influenced the large influx of aspiring officers which the German officer corps was able to benefit from. Count von Schlieffen, for instance, was known to have urged his younger brother to join the Army officer corps because the career was cheaper to prepare for and would provide him with an income more quickly than
the civilian equivalents. Another General, Hermann von Holleben, had originally desired a career as a merchant but was compelled to join the Army because his family could not afford the fees for a commercial education (Hughes 1987).

The alternative options to entrance into the officer corps in early twentieth century Germany were thus poor and this provided one of the key factors behind the German Army’s ability to recruit officers without breaking the national budget for pay and pensions. Without the German *Standestaat* tradition of strong semi-autonomous professions able to closely regulate entrance, this would not have been possible.

The German Army’s Officer Corps provided an outlet in which young men could gain a good and respected living without requiring a very costly up-front education. This proved especially popular for relatively poorer families of a minor civil service, military or landowning background who formed the backbone of the German Army officer corps straight through to the end of World War Two (Moncure 1993).

Other, complementary aspects of the German production system provided further impetus to military recruitment, this time by improving the prospects of individuals once they had left the service. Individuals who are relatively confident of their ability to earn a living once they have left the military will be far more willing to join in the first place. As the official historian of the German NCO corps under the Nazis, Captain Freiherr Ferdinand von Ledebur, stated in 1939:

“A satisfactory system of finding civil employment (*Zivilversorgung*) will in the future continue to be an absolutely essential precondition for the recruitment and retention of an NCO corps satisfactory both in numbers and in quality.” (von Ledebur 1939)
In Germany the two main factors which gave applicants to the military a high degree of assurance that they would be able to obtain post-service employment were the relatively large civilian state bureaucracy and the national system of employment certification.

For applicants to the NCO corps in the Imperial era, the inducement to devote themselves to a military career were free education at the *Unteroffizier Schule* and, on completion of 12 years’ satisfactory service, a certificate known as a “Zivilversorgungsschein” – a guarantee of first preference for civilian employment in the state bureaucracy for the rest of the NCO’s working life conditional on satisfactory recommendations from one’s commanding officer. This institutional innovation motivated the NCO to work hard both on developing his military skills and in fighting – the satisfactory recommendations from superior Officers which entitled the NCO to the *Zivilversorgungsschein* were by no means always forthcoming and Samuels reports that insecurity over whether they would receive the certificate led to NCOs having some of the highest suicide rates of any occupational category in Imperial Germany (Samuels 1995). Moreover, the guarantees provided by the *Zivilversorgungsschein* extended not simply to graduates of the *Unteroffizierschulen* but to all NCOs and to officers who were incapable of continuing their service in the military after at least ten years. They too were entitled to lifetime civil service employment through the *Zivilversorgungsschein* (Edmonds 1951).

The catch, of course, for an Executive looking to emulate the German system, would be that the *Zivilversorgungsschein* would require a public bureaucracy large enough to take on significant numbers of retired NCOs in positions to which their background and training may not have suited them. Again, here the interlocking German labor market and governmental institutions generated sufficiently high productivity to support a state sector carrying such a dead
weight (from the point of view of the institutions into which the retired NCOs would go). Germany consequently had many mammoth public bureaucracies which could easily soak up former military personnel – in 1913, the Prussian Ministry of Works was the largest employer in the world. Its Railways Administration employed 310,000 workers and the state controlled mining sector a further 180,000 (Clark 2006). Edmonds reports that former officers and NCOs found employment in all German state bureaucracies besides the Foreign Office, filling such positions as post office employees, border and prison guards, police officers, and administrators in ship measurement, the state and federal statistical offices, forestry, public health, patent offices, insurance regulation, lotteries, the mint, registers of births, marriages and deaths, schools, colleges, meteorological offices, art galleries, orphanages and museums (Edmonds 1951). To publicize the attractive options open to former soldiers, the Prussian War Office regularly published a list of all the jobs held by former Reichsheer officers and NCOs in a book called the Anstellungsnachrichten (Information Regarding Civil Appointments) (Edmonds 1951).

The Reichsheer’s practice of providing civilian bureaucratic employment for former soldiers was continued by the Nazis. For instance, former SS officers and NCOs were guaranteed a position in the civilian (Allgemeine) SS bureaucracy on retirement (Gelwick 1971). There they could be found jobs dealing with administrative tasks for the soldiers of the Waffen-SS and the concentration camp guards of the SS Totenkopfverbaende. The Allgemeine-SS also carried out a number of other tasks such as ancestral and archaeological research, running orphanages for children of Aryan origin and managing forty SS-owned para-statal enterprises such as materials and textile manufacturing companies (Ziegler 1989).
The second facet of Germany’s coordinated market economy system which improved the post-service employment prospects of German officers and NCOs was the system of national trade certifications.

Recognizing the asset which the *Zivilversorgungschein* had represented to the *Reichsheer* (Schwann 1891), the Allies set strict limits on the size of the German civilian bureaucracy under the terms of the Treaty of Versailles. At the same time, they compelled Germany to abolish conscription and the *Unteroffizier Schuler*. Consequently, the German Army would be faced with the difficulty of trying to recruit and train non-commissioned officers without recourse to the two traditional sources of men for such positions and without the inducement they had traditionally been able to offer.

The *Reichsheer* continued to offer the *Zivilversorgungschein* to retired officers and NCOs during the Weimar period, but partly due to the Versailles restrictions found it increasingly difficult to place everyone who had them (von Ledebur 1939).

However, here the German system of national vocational certificates, based on strong professional associations, provided a solution. In addition to offering a *Zivilversorgungschein* for men leaving the Army, the German Army instead gave them compulsory training in a skill of their choice, with the final exam administered and signed by a representative of the local labor union. This certificate would then be nationally recognized. For officers, the equivalent was

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preparation for the standard civil service exam, which could lead to a position in the state bureaucracy again or to a job as a ‘Privatbeamte’ or administrator in a larger German firm.

The German Army’s system for finding post service employment for its men was thus one of the most effective in the world. For instance, a Reichstag member was reported in 1926 as saying that:

“The system of finding employment for former soldiers (Zivilversorgung) is the most wonderful chapter in the whole organization of the Wehrmacht.”

It should also be noted that some revisionist historians have questioned the view of German fighting effectiveness outlined above. Geoffrey Megargee, for instance, points to severe logistic deficiencies on the part of the German High Command, especially with respect to the invasion of the Soviet Union. The contrast with the logistical effectiveness of the Western Allies is striking. Indeed a historical consensus appears to be arising that the Western Allies and the Germans had ‘complementary’ strengths and weaknesses – the Germans were strong in tactical proficiency (the ‘teeth’ of the Army) but weak in logistics while the British and Americans were strong in logistics but weaker in tactical proficiency (Megargee 2006; French 2000).

To some extent, Megargee’s critique is warranted. Certainly, the support branches of the Allied armies were highly effective, as the British chapter makes clear. This is entirely consistent with the funnel theory – support branches equip troops with transferable skills. Also, German troops did suffer frequently throughout the war from shortages of key materials (van Creveld 1977).

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8 Speech by Lt Gen Ritter von Haack, Reichswehr Ministry, Reichstag 5th March 1926. p5983-5986. Courtesy of the Bayerische Staatsbibliothek

9 Reichstag, Thursday 10th March 1931. Courtesy of the Bayerische Staatsbibliothek
However, it would be a mistake to conclude that the German Army was short of supplies because the German Army was poor at logistics. It may be fairer to say that the German Army simply did not have the same advantage in logistics which it enjoyed in tactics. More importantly, Germany’s strategic position would have taxed the abilities of any logistical service. As noted by Liddell Hart, the majority of the world’s most crucial war fighting materials—especially, but not only, oil—were located outside Europe on the territory of powers hostile to Germany (Liddel Hart 1999). Once war began, Germany would simply be unable to access supplies from Texas oil wells or Canadian nickel mines.

Thus although Germany did not enjoy the same advantage in logistics and support functions as it did in battlefield tactics, this does not invalidate the funnel argument. In fact, it confirms it—a labor market based account would not expect Germany to have an advantage over Britain or the United States in military functions which offer skills transferable to the civilian economy.

In short, then, two interlocking characteristics of Germany’s coordinated market economy allowed it to maintain a high level of recruitment into the Army. The first was the strength of professional associations. This created high barriers to entry to alternatives to the military profession for suitable young men. It also meant that Germany enjoyed a system of nationally recognized vocational qualifications which were used by the Army of the Weimar Republic, to equip soldiers with skills which would allow them to earn a living in civilian life once they left the service. The second was the large state bureaucracy, which provided a natural outlet for the post-service employment of NCOs and officers lacking skills which they could use in the commercial marketplace.


6.8 Conclusion

The German Army’s high levels of destructivity therefore resulted from the effective operation of the recruitment funnel I described in the theory chapter. The German officer and NCO corps benefited from a huge supply of willing recruits, which allowed it to operate an extremely competitive system of promotion through military skills acquisition. Knowing that the military skills of their Junior leaders were so finely honed, Senior German officers could safely devolve power to them through the command philosophy of Auftragstaktik. This in turn allowed them to take advantage of unexpected and unforeseen turns on the battlefield. The moral hazard which this might have created was solved through a system of peer monitoring in which, above all, German Junior leaders wished to maintain the esteem of their comrades by refraining from shirking.

Harsh punishments mattered at the margins. They were scarcely used at all in the First World War, in spite of which the Heer gained a spectacular reputation even with its bitterest foes. They also were not much in evidence in the early years of World War Two, when the Wehrmacht won its most famous victories.

Negative incentives were most heavily employed in the final years of World War Two, when Germany was engaged in desperate defensive battles. Even then, it was only employed in rather clear cut cases of desertion and other types of ‘shirking’ behavior. Its effects were to inflict heavy casualties on the Allies on both the Western and Eastern fronts, prolong the war and prevent a complete collapse of morale as had occurred in 1918.
Germany’s very broad recruitment funnel was the result of a number of factors. First, the fact that Germany had never before had a coup created a self-reinforcing set of mutual expectations in the German officer corps that made future coups also unlikely. This ensured that German leaders, although autocratic, did not have to resort to the extreme interference in the officer corps’ selection and promotion structures that characterize modern day developing world autocrats.

Yet this alone cannot explain why Germany should have outperformed rather than merely matched other stable polities such as Britain. What gave Germany the edge amongst other European states was her coordinated market economy system. High barriers to entry to alternative careers broadened the funnel of potential recruits, as did the large civilian state sector, which gave German leaders a place to employ former soldiers who may have struggled to find work in competitive markets. When the Treaty of Versailles took pains to close off this option to Germany, the system of national vocational certificates made the task of finding post-service employment far easier for German officers and NCOs.

When one is asked whether some autocratic state may again ever be able to create an instrument as terrible as the early twentieth century German Army again, few military analysts would suggest looking at the alternative employment opportunities are for officer candidates, or whether officers and NCOs can easily find employment when they leave the service. This case study suggests, however, that these factors are crucial.
7. The British Case

“After the experience of recent years we think it will be generally admitted that the question of a field of employment for discharged soldiers lies at the root of our military system. Unless it is possible for every man of good character to be reasonably sure of employment when his period of service expires, the Army must necessarily fail to attract recruits of the better class. Every ex-soldier who is compelled to tramp the streets with a good character in his pocket is obviously a bad advertisement for the Army, and must have the effect of discouraging others from joining.”

Report of the House of Commons Committee on Civil Employment of Ex-Soldiers and Sailors, 1906

“Half our Corps and Divisional Commanders are totally unfit for their appointments, and yet if I were to sack them I could find no better!”

Field Marshall Sir Alan Brooke, Chief of the Imperial General Staff, 1943

The Britain which entered World Wars One and Two shared certain characteristics with its principal foe Germany. Like Germany, Britain enjoyed high levels of human capital in global terms, although its level of education was generally agreed to be a little below that of the Germans (Vincent 2000). Like Germany in the First World War, Britain had a long established political system and had not suffered a coup for centuries (Strachan 1997). Britain was a more democratic country than Germany throughout the period, however. At the start of World War One, the Polity database gives Britain a score of 6 – electoral competition was free and fair and basic rights were guaranteed. However, property-based restrictions on the right to vote meant that Britain did not at the time qualify as a full democracy. Shortly after the war, the Representation of the People Act extended the franchise to both women and property-less males, increasing

Britain’s Polity score to a full 10 which it has maintained ever since\(^1\). As Germany slid into a full

\(^1\) [http://www.systemicpeace.org/polity/polity4.htm](http://www.systemicpeace.org/polity/polity4.htm)
autocracy under the Nazis, the difference in level of democracy was thus even more pronounced in World War Two than in World War One. As Britain became more democratic, so the severity of its military penal code was also lessened. Most notably, the death penalty for desertion was abolished in 1930. Also unlike Germany, of course, Britain was also an island, and enjoyed more favorable alliance partners in both world wars in terms of relative power (Kennedy 1981). Moreover, Britain favored a ‘night-watchman’ state with a small government bureaucracy and displayed the characteristics of a proto-liberal market economy, especially with minimal standardized vocational and professional qualifications (Floud 2008).

The above stylized facts lead to several contrasting predictions about British destructivity relative to Germany.

$H_1$: Democratic triumphalism. British troops should out-fight the German Army pound for pound in both World Wars, with an even greater edge in World War Two than in World War One. British troops should be more motivated as they have a greater stake in their home society and should fight with more initiative because this is prized by the democratic culture in which they were raised.

$H_2$: Coup proofing. Not being vulnerable to a coup, British leaders should have no reason to hobnail the British Army to ensure their own political survival. As this is also true of Germany, there should be no difference in destructivity between the two countries.

$H_3$: Human Capital. As Britain’s level of human capital is somewhat lower than Germany’s, Britain’s destructivity should be too. This is because illiterate recruits; unable to understand their orders or be trained to a high standard, will act as a drag on British military skill.
$H_4$: Realism. As Britain was an island with powerful allies, British leaders realized that their national survival depended on having a good Navy rather than a good Army. For land fighting, the British could rationally free-ride on their allies, and hence simply had less need to invest in military skill. This should be visible in British budget decisions, with naval personnel receiving preferential treatment relative to the Army.

$H_5$: Motivation. Motivation for the British Army will work in complex ways. While peer monitoring and social sanctions will be most effective where performance cannot be directly observed by superiors, harsh punishments will work in situations of high observability. This implies that the British Army’s motivation levels in certain situations should be lower in World War Two than in World War One, following reforms to British military law.

$H_6$: The Funnel. Britain enjoyed a pool of reasonably trainable candidates for junior leadership in the Army. Due to the lack of coups, the British also did not put politically-inspired restrictions on officer recruitment and promotion. However, British officer and NCO recruitment would be hampered by the high outside opportunities available in a flexible labor market and by the difficulties in finding post-service employment experienced by retired military personnel. Consequently, Britain would not enjoy the same level of competition in skill acquisition that Armies which had solved the recruitment problem more satisfactorily would have. This will mean that Britain will have lower levels of skill in the officer corps and hence marginally lower destructivity than the Germans. However, this deficit should not extend to areas of the military with transferable skills – the Navy, Air Force and the support branches of the Army. With the advent of conscription circumventing the normal operation of the labor market in both wars, the gap between the British and Germans in tactical skill should also narrow as both wars progress.
7.1 Democratic Triumphalism

The record of the British Army in the early twentieth century does not conform to the image of a ‘powerful pacifist’. The quantitative evidence of the loss exchange ratio between the German and British Armies has already been cited in the German case study. In his canonical study, Military Power, Stephen Biddle uses the British Army as a prime example of an organization which failed to adopt the crucial modern system. Two of his in-depth case studies – Operation Michael in 1918 and Operation Goodwood in 1944 – feature an operational failure on the part of the British Army even though all other factors such as numbers and technology should have predicted British success (Biddle 2004). Moreover, these judgments by contemporary political scientists bear out the train of events in World Wars One and Two and the qualitative judgments of observers at the time.

In both world wars, the British Army suffered a number of serious reverses and heavy casualties which belied the ultimate outcome of the conflict. These reverses undermined British power and left Britain reliant on more powerful allies to emerge victorious in the overall conflict.

In World War One, the British Army engaged in a series of fruitless and costly offensives designed to drive the German Army out of France and Belgium – Loos (Hattersley 2010), Neuve Chappelle (Samuels 1995), the Somme (Samuels 1995) and Ypres (Hattersley 2010). Many of these early offensives, especially the early stages of the battle of the Somme, revealed little tactical sophistication on the part of the British leadership, who relied on crude and bloody human wave assaults by massed infantry in daylight.
On other fronts, the British Army suffered embarrassing reverses against Ottoman Turkey at Gallipoli and the first Mesopotamian campaign (Judd 1996).

These operational reverses were reflected in outside observers’ estimates of the performance of the British Army, and especially its leadership, in the First World War. German Field Marshall Hans von Seeckt, interwar Chief of Staff of the Reichsheer, reflected on the War that the British Army had an impressive capability to raise large and well equipped Armies, but that the shortcomings of its officer corps meant that it was far less formidable than it appeared on paper (Corum 1992). Lower level Reichsheer officers also commented on the lack of skill of the British Army. One German regimental history of the First World War described the British Army as “determined and full of go, but lacking in intelligent tactical work and showing no skill in making use of the successes they generated” (Samuels 1992).

On the Allied side, war correspondents such as the Australian Keith Murdoch were prepared to criticize the British Army leadership openly during the conflict, in spite of the trouble this caused with the military authorities (Knightley 2004).

Such critiques, however, would have found a receptive audience at the highest levels of the British civilian leadership. Prime Minister David Lloyd George himself had a very low opinion of the abilities of the British officer corps (Hattersley 2010). Such was his lack of confidence in the Army’s leadership that in 1917 Lloyd George pressed unsuccessfully for the creation of a supreme Allied command which would effectively subordinate the British Army under the command of the French General Robert Nivelle (Hattersley 2010). Finally, in 1918, the

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2 Although there are many individual regiments with the title ‘Royal’, the British Army as a whole is simply termed ‘the Army’. Thus although there is a Royal Navy, a Royal Air Force and Royal Marines, there is no ‘Royal British Army’. http://www.army.mod.uk/
German breakthrough in Operation Michael gave the Prime Minister the opportunity to prevail over the opposition of the British Army’s Senior Leadership and create an Allied Supreme Command headed by a French officer, this time Marshall Ferdinand Foch (Hattersley 2010).

The Second World War likewise revealed some severe shortcomings in the British Army’s fighting effectiveness. The British Army’s first operations in the Second World War resulted in a decisive defeat in Norway (Hastings 2009). The Army was then swiftly expelled from Western Europe in the Blitzkrieg of 1940 (Hastings 2009). Although in the latter campaign the British Army represented only a small proportion of the overall Allied Armies, it fared little better in subsequent campaigns against the Wehrmacht where British and Commonwealth forces represented the overwhelming majority of the forces engaged.

The British Army was pushed out of Greece by the German offensive and pulled back to the island of Crete (Hastings 2009). There the Germans were also able to force a British withdrawal through an airborne assault, even though the British enjoyed numerical superiority and had inflicted heavy losses on the vulnerable German paratroops while they were landing (Hastings 2009).

In North Africa, initial British success against the Italians was reversed when Hitler dispatched two German Panzer divisions under Rommel’s command to stabilize the situation. Throughout the North African campaign, the British enjoyed numerical superiority as the Germans were compelled to keep the maximum number of forces on the Eastern front to fight the Red Army. The British also benefited from generous supplies of American manufactured and financed equipment through Lend-Lease and other schemes, most famously in the form of the

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3 From the start of Operation Barbarossa to the end of the war, Hitler never kept less than two thirds of the German military’s total combat strength on the Eastern Front, see French, p274
Grant and Sherman tanks. Nonetheless, the British suffered a number of defeats, for instance at Gazala and Tobruk, before finally turning the tide at El Alamein in 1942, by which time their numerical advantage in men and materiel had become overwhelming (Dupuy 1977).

For the remainder of the war against Germany, British and Commonwealth forces alongside the Americans took the offensive. Historians such as David French have pointed out that the Army’s senior leadership improved markedly towards the end of the war (French 2000). However, this consisted mostly in finding workarounds to achieve victory in spite of the Army’s low level of skill – specifically by overwhelming the Germans with aircraft, artillery and armor which were mostly either financed or made by the United States. The British advance in the second half of the war was consequently much slower than that of the Germans in the first half and involved a number of serious reverses, such as the repeated failure of British offensives to break through German defenses in the Battle of Normandy (Ripley 2004).

In the Far East, the British Army also performed poorly against the autocratic Japanese. British and Commonwealth forces were quickly expelled from Malaya, Burma and the Dutch East Indies (now Indonesia) by the Imperial Japanese Army. Most humiliatingly, the garrison of the Britain’s most important Asian base – Singapore – surrendered in 1942 to a Japanese force one third its size (Hastings 2009). Again, as in Europe, the British were finally able to recover with the help of numerical and material superiority, recapturing Burma from the Japanese in 1945 (Hastings 2009). However, the record of previous reverses had so damaged Britain’s reputation for military competence in East Asia (or ‘prestige’ as it was known at the time), that the British

4 Britain’s foreign exchange reserves were exhausted by March 1941. Thereafter, Britain depended on the United States not only to supply a substantial proportion of its equipment, but also to finance Britain’s own war production through aid and soft loans. See the Audit of War, Correlli Barnett, pp38, 51, 144-5
were compelled to grant independence to many of their Asian colonies such as Burma, India, Malaysia and Singapore very rapidly after the war (Judd 1996).

As in the First World War, outside observers from a variety of perspectives expressed a low estimation of the British Army’s destructivity.

German intelligence reports from the North African campaign suggested that: “English leadership in large scale engagements is slow and cumbersome”. Later reports added: “The slowness and clumsiness [of the British Army] has not changed. There was no alteration in tactical planning as the battle developed in a way which had not been expected beforehand”. In France later in the war, German General Diestel reported that “[British] attacks were too well-organized and lacking in originality to take advantage of a completely defeated enemy”, while the commander of one Panzergrenadier Regiment wrote that “it is known that [British infantry] patrols do not use much skill in approach”. As French states, German reports throughout the war concluded that British junior leaders were lethargic, lacked initiative and were tactically inept, which the Germans attributed to a lack of proper training (French 2000).

Enemy opinion on the fighting spirit of British enlisted men was mixed. Conversations overheard among German PoWs gathered by Soehnke Neitzel reports that many German enlisted men had a very high opinion of the courage of their British counterparts. Neitzel reports the use of words such as ‘tough’, ‘very hard’ and ‘just like us’ (high praise given German troops’ high estimation of their own abilities) with respect to British troops. He quotes one veteran of the North African campaign as saying “Stick a Brit in a German uniform and you wouldn’t notice the difference”. More senior German commanders, however, appear to have had a lower opinion of
British fighting spirit and pointed to the reluctance of British troops to engage in close quarters fighting and too great an eagerness to retreat in the face of tough resistance (Neitzel 2012).

What makes it hard to dismiss low opinions of British tactical skill as German propaganda or conceit is the fact that they were shared by many on the British side. Permanent Secretary to the Foreign Office Sir Alexander Cadogan wrote in 1941:

“Our soldiers are the most pathetic amateurs, pitted against professionals. The Germans are magnificent fighters and their staff are veritable masters of warfare.”

The following year he added:

“What if the Germans get a foothold here? Our Army is the mockery of the world!”

(Hastings 2009)

In contrast to the First World War, many British journalists were more than happy to express criticism of the officer corps directly. Tom Wintringham of the popular Picture Post voiced devastating criticism of the Army’s leadership in his 1941 article “What has gone wrong in Libya?” The following spring, John Gordon of the Daily Express claimed that the Army’s officers were men who had pursued ‘cushy billets’ in the inter-war military while more able individuals had found careers in the civilian world (more of which later) (Hastings 2009).

As in the First World War, however, such concerns were shared at the highest levels of the British command. The Chief of the Imperial General Staff, Field Marshall Sir Alan Brooke, noted on March 31st 1942:

“During the last fortnight I have had for the first time since the war started a growing conviction that we are going to lose this war unless we control it very differently and fight it with more determination. But to begin with a democracy is at a great disadvantage against a dictatorship when it comes to war….It is all desperately depressing. Furthermore it is all made worse by the lack of good military commanders.
Half our Corps and Divisional Commanders are totally unfit for their appointments, and yet if I were to sack them I could find no better!” (Alanbrooke 2001)

As Field Marshall Brooke also related, such concerns extended up to Britain’s civilian leadership and Prime Minister Winston Churchill himself:

“These were very difficult times for me in the Cabinet and Winston was the worst offender. He came out continually with remarks such as: “Have you not got a single general in that army who can win battles, have none of them any ideas, must we continually lose battles in this way?”, etc, etc. Such remarks lowered the confidence of other ministers in the efficiency of the Army, and could be nothing but detrimental in the present crisis…This procedure also led to other ministers also making offensive remarks at the expense of the army.” (Alanbrooke 2001)

The fact that British soldiers were fighting to protect a democratic political system in which they had a voice made scarcely any impact on British combat motivation. A secret War Office report confessed that:

“Getting the English worked up enough to defend democracy was an uphill task, as the average soldier appeared to have only three basic interests: football, beer and crumpet.” (French 2000)

In World War Two, the Churchill Government attempted to give British troops a sense of ‘what they were fighting for’ through political lectures by the Army Bureau of Current Affairs. However, as Jeremy Crang pointed out:

“A good number of soldiers continued to regard (ABCA political discussion sections) with a marked degree of apathy and cynicism and as little more than an opportunity to have a leisurely cigarette, a crafty nap and- if they were lucky – a bit of fun at the officer’s expense.” (Crang 2000)

As one former soldier claimed:

“ABCA and BWP (British Way and Purpose, an Army Bureau of Current Affairs lecture series) were a break in the training routine where soldiers could smoke and dream
whilst somebody else stood up and aired extremist political views. If these appeared to embarrass the officer then everybody agreed with them for the hell of it.” (Crang 2000)

A contemporary edition of the Economist concurred:

“The temptation to see army education through somewhat romantic glasses is too seldom resisted. The picture of a great civilian army pulsing with interest and information on world affairs and civic problems is almost entirely a well-meaning myth. The mass of soldiers, like the mass of citizens, is mostly unmoved and unaffected by matters outside daily work.” (Crang 2000)

In sum, then, the British Army’s consistently lower levels of destructivity relative to the Germans constitute a challenge for democratic triumphalism, as the quotes illustrate starkly. Why, over the course of two World Wars, was the Army of democratic Britain mostly outfought pound for pound by the Army of autocratic Germany?

7.2 Coup Proofing

Coup proofing does not provide the answer to this puzzle. This is not to say that British civil-military relations of the period were harmonious. However, the durability of the British constitutional settlement, rather than its democratic nature, had come to generate shared expectations among British officers of the implausibility of a coup.

The most contentious issue in British civil-military relations of the early twentieth century was that of Irish Home Rule. The Liberal Government proposed legislation to give greater autonomy to predominantly Catholic Ireland. The majority Protestant North, however, refused to accept Irish Home Rule and began to form and arm unofficial military organizations to resist the authority of any Dublin-based legislature. This raised the prospect of the British Army being brought in to disarm the Protestant militia organization the Ulster Volunteer Force (UVF). However, many British officers were themselves either Irish Protestants or sympathetic to their
cause. The crisis came to a head with the so-called ‘Curragh Mutiny’, in which a number of British cavalry officers stated that they would not be involved in any attempt to disarm the UVF. Closer inspection of this incident, however, reveals it to be different in kind to a coup d’etat or the threat of one. The officers did not threaten to march on London, overthrow the Government nor call on any other officers to do so. They simply stated that they would resign their commissions rather than move to disarm the Protestant militias in Ulster. Even such a limited challenge to the civil authority caused a great deal of uproar, however, and the Curragh officers gained limited support from other senior Army figures. The Government in turn backed down by claiming that they had not intended to ask the officers to coerce Northern Irish Protestants and took no action against the mutineers (Clayton 2006).

Thus the Curragh incident actually shows the relative strength of the British state against a coup. Even on an issue where many officers deeply objected to Government policy, no move was made by the military to overthrow the civilian authority. Instead, the officers arguably remained within the appropriate chain of command by threatening only resignation over the issue. In return, the Liberal Government did not see fit to purge the officer corps of potentially disloyal elements or to flood it with pre-screened political loyalists.

Contentious incidents during the First World War likewise showed the relative invulnerability of the British system to a military coup. Relations between Prime Minister Lloyd George and his Chief of the Imperial General Staff Field Marshall Sir William Robertson were very poor (Strachan 1997). Matters came to a head over the issue of placing British troops under a French Allied Supreme Commander, an issue over which Robertson was eventually forced to resign. Political opponents of the Prime Minister such as the editor of the conservative Picture
Post, HW Gwynne, used the crisis to advocate for Lloyd George’s replacement as Prime Minister by Robertson (Strachan 1997). As Robertson was neither an MP nor a member of the House of Lords, the constitutionality of such a move would have been ambiguous. However, Robertson himself firmly rejected such talk in private as absurd (Woodward 1998). Gwynne and his co-conspirators moved swiftly on to searching for a more constitutionally appropriate replacement for Lloyd George, such as the Speaker of the House of Commons, James Lowther MP (Wilson 1988). The reaction to Gwynne’s suggestion at a time of intense crisis simply served to show the stability of the mutual expectations which underpinned the British constitutional order. Lloyd George, for his part, refrained from attempting to pack the officer corps with his political loyalists. His frustration with the officer corps stemmed from his perception of their military incompetence rather than a belief that they constituted a direct political threat to him.

The same is even truer of the Second World War. In spite of the frequent expressions of frustration with Churchill in his diary, Field Marshal Alanbrooke never even contemplated trying to replace him as the head of the Government. Churchill’s leadership was often widely questioned during the course of the war –especially after the fall of Tobruk to German forces in 1942. Many figures in the press, public and parliament expressed the view that his strategic performance was sub-standard and that he should be replaced as Prime Minister. However, the preferred successor was not a military officer but rather a civilian MP, Sir Stafford Cripps (Hastings 2009). In short, even in the worst days of World War Two, when the British public, press and parliament had the least confidence in Churchill, a military takeover was still literally unthinkable. Churchill, secure from any threat from his own Army, felt free to recruit and promote officers on merit.
Whatever the reasons for the low levels of British destructivity in World War Two, then, coup proofing is not one of them.

7.3 **Human Capital**

Human capital provides a seemingly convincing first cut explanation of why the British Army may have struggled against the Germans in both World Wars. For decades prior to the First World War, observers had noted that the average standard of education in Great Britain was falling behind that of Germany, especially in science and technology (Simpson 1979). It would therefore appear plausible at first blush to conclude that Germany’s marginal advantage in human capital translated into a marginal advantage in destructivity. However, if we examine carefully the potential causal mechanisms linking human capital to destructivity, it can be seen that this explanation is not valid.

Literacy does not account for the difference between the two countries. England, Scotland and Wales had, like Germany, achieved near to universal literacy prior to World War One (Vincent 2000). Admittedly, the same is not true of the southern counties of Ireland (today the Republic of Ireland), where up to 25% of the population was still illiterate by 1900 (Vincent 2000). The southern counties of Ireland, moreover, provided a disproportionately high number of recruits to the pre-war British Army (Oram 1988) (more of which later). Yet this cannot account for the difference between British and German destructivity for the following reasons. First, a lack of skill in the Junior leadership was the major factor cited by both sides in the problems of the British Army in World War One –yet an Irish enlisted man would stand a reasonable chance of becoming an NCO, but would almost certainly not be promoted to a commissioned officer in the pre-World War One British Army (Clayton 2006). Second, the pre-war British Army held
remedial basic education classes for enlisted men, in which the small percentage of illiterates could have made good their deficiency (Baynes 1967). Third, conscription was never introduced in Ireland, so that the proportion of Irishmen in the British Army dropped over the course of World War One (Hattersley 2010). In World War Two, moreover, Eire was independent and neutral – some Irishmen did still volunteer for service in the British Army, but constituted a tiny proportion of Britain’s overall fighting strength (Addison and Calder 1997).

Second, spillovers from technical education which soldiers may have acquired to gain employment in industry also cannot explain the difference between the two Armies’ destructivity. It is true that British industry relied more heavily upon unskilled manual labor than did Germany. Moreover, the training for British skilled trades was generally considered less rigorous than for their German counterparts. Again, it would be tempting to point to this as a major factor in the British Army’s lower levels of destructivity. Close examination of the tactics of the British Army, however, allows us to reject this hypothesis. In fact, the British Army in both World Wars arguably operated at a higher technological level than the Germans. The British rather than the Germans were the first to develop the tank (Griffith et al 1996). The Canadians, for their part, developed a rudimentary form of radar to locate and destroy German artillery at the Battle of Vimy Ridge (Finny and Hurley 1997). Moreover, while the favored tactic of the German Army was to achieve breakthrough with low-tech stormtroop tactics, the British more frequently chose to use a combination of armor, artillery and aircraft in the final stages of the war (Griffith et al 1996). In the Second World War, the British Army, unlike the Germans, was fully motorized. In short, the British Army’s soldiers were at least as capable as the Germans at developing and operating high tech weaponry. In fact, German criticism of British performance in the Second
World War was not that the British were not able to use advanced weaponry but that (like the Americans), they were too dependent on it (French 2000).

Third, there is the Spence view that education might allow Armies more effectively to screen out low quality individuals prior to enlisting and training them. Prior to both wars, however, the British Army’s problem was not so much determining the ability of potential recruits as obtaining any high quality men at all. As the Chief of the Imperial General Staff, Sir Cyril Deverell, admitted in a classified War Office Memo in 1937:

“I have no objection to any man who is not an imbecile being enlisted, ie I do not consider rejection on educational grounds alone should be a sine qua non, but I should not proclaim it too loudly.” (French 2000)

During the wars themselves, by contrast, when massive Army expansion allowed the British to draw on a larger pool of recruits, the procedures for assigning men to service branches and promoting them did not rely on civilian educational attainment, but partly on battlefield attainment (in the First World War) and partly on the Army’s own in house procedures (in the Second). These procedures will be described at greater length below.

Fourth, there is the possibility that a higher level of pre-war education may raise the overall cognitive ability of the Army. Although the vagueness of this hypothesis makes it hard decisively to confirm or reject, it seems unlikely in this case. As we have seen, the level of general as opposed to specifically military education of both the pre-war Reichsheer and the Waffen-SS was fairly low, certainly no higher than that at the British public schools from which
the British officer corps was overwhelmingly drawn (Clayton 2006). Officers of the pre-war British Army (both WWI and WWII) were not widely renowned for intellectual achievement (Hastings 2009). However, this was not because the British education system in general was poor but rather because the British Army had difficulty recruiting the best products of that system, as we shall see below.

In short, then, the British Army’s lower levels of destructivity relative to Germany in the early twentieth century cannot be ascribed to the difference in human capital development between the two countries. Britain’s education system prior to both wars was more than sufficient to produce large numbers of capable NCO and officer candidates to be trained for modern warfare.

7.4 External Threat

Realists would suggest that Britain’s geography and alliance patterns should account for its lower levels of destructivity relative to the Germans. As an island, the stopping power of water would have made an invasion of Britain itself very difficult. In both World Wars, Britain needed a good Navy to protect its supply routes from North America and to defend the home islands from invasion. For the bulk of the land fighting, however, Britain could rely on France and Russia in the First World War and the United States and the Soviet Union in the Second. John
Mearsheimer, commenting on British grand strategy between the wars, noted that Britain could afford to have either a powerful Navy or a powerful Army, and quite rationally chose the former (Mearsheimer 1981).

In terms of the recruitment and training of the different British services, this should mean that British policymakers should be prepared to open the loosen the purse strings to pay for a good quality Navy, even if they were not prepared to pay in a similar fashion for a good Army. Better pay and pensions, in turn, should have allowed the Navy easily to recruit the best applicants.

Yet the ability of the Royal Navy to recruit personnel more effectively did not result from higher pay or better terms and conditions of service. Just as British Army officers’ pay did not compare unfavorably with that of their German counterparts, so also did it hold up well in comparison with their fellow countrymen holding equivalent ranks in the Navy.

Using information provided by the Annual Appropriations from Parliament for the Army and Navy (see Appendix), I list below the annual pay of various equivalent ranks in each service in the late 1920s and early 1930s. For each rank, Army officers fare at least as well as their Naval equivalents.
Figure 31: Relative pay for Lieutenants, British Army versus the Royal Navy prior to World War Two

Figure 32: Relative pay for Captains/Lieutenants, British Army vs Royal Navy prior to World War Two
Figure 33: Relative pay for Majors/Lieutenant Commanders, British Army vs Royal Navy prior to World War Two

Figure 34: Relative pay, Lieutenant Colonels/Commanders, British Army versus Royal Navy, prior to World War Two
In terms of pensions, the Army fares a little more poorly relative to the other services. Pensions in the Royal Navy were calculated according to complicated rules involving seniority and time in service, so as the best measure of the generosity of pensions by service branch, I used the appropriations to calculate the average pension per rank at retirement for one representative year in the inter-war period, 1933. This shows that although retired Naval and Air Force officers fared a little better than their Army counterparts, the difference is very small.

**Figure 35: Mean Pensions for retired British officers by service branch, 1933**

In short, then, the British Army’s did not suffer from a lower investment in its personnel either relative to its own sister service the Royal Navy, or to its German counterpart. The evidence that British and German policymakers sought to prioritize building the ‘human capital’
of the service most necessary to their national survival by spending freely on pay and pensions to underpin recruitment is not there.

7.5 Motivation

Another potential source of the difference could lie in the means used to motivate the British as opposed to the German Army. In terms of the severity of punishment meted out for shirking, Britain and Germany moved in opposite directions between the wars. The British became more liberal as the franchise was extended, while the Germans became far harsher as Hitler removed the last vestiges of democratic institutions from German politics. Unpalatable though it may seem to draw such a conclusion, there is evidence that by liberalizing the military penal code, the British reduced motivation and effectiveness. Nonetheless this must be caveated. First, as my theory predicts, severity of punishment cannot explain the British deficiency in tactical skill. As we have seen, this deficiency was present in both World Wars, even though British military discipline was more severe than Germany’s in World War One and less severe in World War Two. Moreover, for situations in which observation was difficult, both armies had effective peer monitoring systems which had little to do with their respective political systems.
In the First World War, the British Army operated a very rigid and tough disciplinary system. On the Western front this system ensured that the probability of successful shirking was low and the punishment for failed desertion high.

In defensive fighting, escaping from the trenches would have required passing through the communication trenches to the rear – yet between the front line and the rear was a very elaborate system of control. First, there were five sets of ‘straggler posts’- choke points in the communication trenches between the front line and the rear- visited at regular intervals by the Royal Military Police. Then there was an intermediate ‘traffic control’ area patrolled by the Military Police. Finally there was a second set of ‘examination posts’ also manned by the Military Police (Griffith et al 1996) . If a deserter succeeded in getting through this system, he would have to make his way through the French countryside to the Channel Ports to take a ferry home. Yet the entrance to the ferry points were also controlled by the British Military Police – deserters had to either stow away (Oram 1988) or use elaborate ruses such as assuming fake identities as American tourists (Oram 1988) to pass through.

In offensive fighting, the massed wave attacks in battles such as the Somme ensured that troops’ actions were readily observable by others, including officers. It would have been very difficult for a given soldier to fail to ‘go over the top’ without being noticed by his comrades.
Moreover, rumors abounded in the Army which persisted into World War Two that officers had shot men who refused to advance (Copp and McAndrew 1990).

For unsuccessful deserters, British military law throughout the war maintained the death penalty for desertion and cowardice, and over 3,000 such sentences were passed during the course of the war (Oram 1988), of which 361 were carried out (Oram 1988).

Brutal though these policies were, quantitative evidence suggests that they did have the intended effect. Daniel Li-Chen, for instance, analyzed executions and desertion rates in the British Army and suggested that the death penalty did indeed deter future desertions in units where executions were carried out (Li Chen 2011). The British Army also did not suffer from a widespread collapse in morale similar to that suffered by the Germans in the Hundred Days’ Offensive of 1918, even after the German breakthrough in Operation Michael. This suggests that, at least minimally in terms of preventing soldiers from breaking and fleeing, and compelling them to attack in open formations where shirking can be easily detected, the death penalty for desertion was effective.

Between the wars, however, largely due to a campaign by a number of backbench Labour Party MPs led by Ernest Thurtle, the military death penalty was abolished in Britain in 1930 (Oram 1988). The Army also lost its ability to rely on stricter punishments short of death – harsher corporal punishments such as Field Punishment Number 1 were also abolished between
the wars (McDonald Fraser 1992). The punishment for desertion in World War Two was set to three to five years’ penal servitude, which in practice was often commuted or replaced with an opportunity for the offender to rejoin his unit and redeem himself in battle (French 2000). In fact, the average time served for desertion in the World War Two British Army was only six months (French 2000).

Laudable though the abolition of the death penalty may have been from a humanitarian standpoint, there is strong evidence that it hampered British fighting effectiveness in World War Two. In the early stages of the war in which Britain was on the strategic defensive, British soldiers were judged by their commanders to surrender too easily. Whereas German or Soviet soldiers who surrendered to the enemy while unwounded and still possessing ammunition could be liable for execution for ‘desertion to the enemy’ if recaptured, no such fate awaited British troops. A British unit which surrendered too easily would deny the rest of the British Army time to respond to German attacks. It would also allow German units to achieve their objectives at too low a cost, from the British point of view. As Field Marshall Montgomery pointed out in 1942:

“There have been far too many unwounded prisoners taken in this war. We must impress on our officers, NCOs and men that when they are cut off or surrounded, and there appears to be no hope of survival, they must organize themselves into a defensive locality and hold out where they are. By doing so they will add enormously to the enemy’s difficulties; they will greatly assist the development of our own operations.” (Tsouras 2000)
When Britain resumed the strategic offensive after 1942, the inability of British commanders to resort to harsh punishments restricted their tactical options. Under many circumstances, it may be necessary to engage in close quarter combat rather than try to bombard the enemy into submission from a distance. If the enemy is well concealed, then bombardment will be relatively inaccurate and will take a great deal of time to work. However, close quarter combat of course exposes one’s own troops to greater risk, which they understandably would prefer to avoid. Knowing that they were not in danger of suffering the death penalty for shirking, many British units flatly refused to engage the enemy in close combat. For instance, during the Italian campaign, a company of the 2nd Rifle Brigade was ordered to mount some Sherman tanks and attack a German-held hill. The riflemen protested to their company commander as a previous attack had suffered heavy casualties and ‘stood around their vehicles like pickets in a strike’ (French 2000). Similarly, French reports entire platoons of the Staffordshire Regiment and the Gordon Highlanders collectively refusing to attack German positions (French 2000). Unable to use harsh punishments, British commanders simply scaled back what they asked their units to do. They rarely insisted on close quarters attacks and relied instead on less efficient aerial and artillery bombardments.

The British attempted to use battlefield psychiatry to remedy the problems caused by being unable to rely on harsh punishments. They believed that ‘rest stations’ manned by trained psychiatrists would allow soldiers to recuperate and eventually rejoin the fighting. Unfortunately, for some soldiers, the ‘rest station’ simply presented a new and less risky way to shirk. Consider, for instance, this conversation between two British soldiers overheard by one memoirist of World War Two:
“SOLDIER 1: Still say we should all get up and go home. They could only shoot us. And we’ll get flaming shot, sitting here.

SOLDIER 2: They don’t shoot people in this war. Not for deserting.

SOLDIER 1: Shot thousands in the last war. For cowardice. Shot 50,000 in one battle.

SOLDIER 2: Couldn’t have shot 50,000 at once. You’re a bleeding idiot.

SOLDIER 1: I’d rather be a bleeding idiot taking the chance of being shot for deserting than a bleeding hero being shot for certain by Jerry (the Germans) over that hedge.

SOLDIER 2: You’re safe if you go bonkers. If you go pissie-cologically (psychologically) sick. They can’t shoot you then.” (Copp and McAndrew 1990)

Indeed, during the most intense phases of the Battles for Italy and France, the number of soldiers who had evacuated themselves to psychiatric units for battle exhaustion was so high as to threaten the Army’s ability to keep fighting (Copp and McAndrew 1990). For instance, at the height of the Battle of Normandy, up to 30% of all British casualties in some units were not physical injuries but battle exhaustion (French 1996). The Germans, by contrast, did not recognize the existence of ‘battle exhaustion’ and, as we have seen, used the death penalty frequently and for a wide variety of offenses, especially desertion and cowardice. It is from this time that many of the most derogatory remarks from both sides on the fighting spirit of the British Army were heard (French 1996).

As a result of this, almost all senior British military commanders of World War Two at one time or another officially requested the reinstatement of the military death penalty. For instance, shortly after the surrender of the British garrison in the Libyan town of Tobruk in 1942, British area commander in North Africa Field Marshall Sir Claude Auchinleck cabled the War Office requesting:
“in strongest possible terms (for) earliest agreement to reintroduce the death penalty for specified offenses.” (French 1998)

Auchinleck’s request was passed on to the War Cabinet by War Secretary Sir John Grigg. Grigg, however, explained to the War Cabinet that it would be very difficult to get the necessary approval from parliament and the public for legislation to reintroduce the death penalty. Auchinleck’s request was consequently denied.

Later in the war, the British Commander in Chief in Italy, Field Marshall Sir Harold Alexander, noted that ‘it was a great mistake to have done away with the death penalty for desertion’, but that ‘it will be a difficult thing to get through the House (of Commons) and as it is a political question, I wouldn’t advise when it can be tried’ (French 1998).

Thus there is clear evidence in the British case in World War Two that politically motivated restraints on commanders’ ability to punish hampered fighting effectiveness. Nonetheless, this factor needs to be qualified.

First, in spite of the large difference in degrees of punishment between the British Army of the First and that of the Second World War, there was a high degree of continuity in terms of command philosophy and skill levels. In both wars, the British relied on a highly centralized, top down system of command and control (Samuels 1995; Fennell 2011). Commanders in World War Two were less willing than their predecessors to launch costly frontal attacks and relied more on tanks, artillery and aircraft to clear the way (French 2000). However, they were not more likely to delegate responsibility to Junior leaders in World War One when they could rely on harsh discipline to prevent shirking than in World War Two when they could not.
Secondly, even in World War Two, only a small proportion of British fighting troops deserted or surrendered, even though they would not have paid with their lives for doing so (Ferguson 2004). As we shall see below, something else was clearly motivating them to fight. Only in situations where the line between shirking and fighting was clear, did harsh punishments make a difference.

Sources suggest that the peer esteem mechanism, which helped the German Army make Auftragstaktik work, was also at play in motivating British troops in both World Wars.

John Baynes carried out an extensive study of the motivations of one British regiment – the Scottish Rifles – at the Battle of Neuve Chappelle in 1915. Studying letters, diaries and conducting interviews with survivors⁵, Baynes concluded that:

“The primary source of self-discipline in the 2nd Scottish Rifles was public opinion within the battalion. One of the strongest reasons for men behaving well and trying to do their best is to earn the respect of their fellows. Put in a negative way, it is to avoid the contempt of others, particularly such people as they themselves admire.” (Baynes 1967)

The First World War British Army was composed of three distinct organizations. The first was the Regular Army (Sheffield 2000), pre-war professionals like the Scottish Rifles. These men had known each other for years and served together in pre-war Imperial campaigns (Baynes 1967). The second was the Territorials – pre-war reservists. According to Gary Sheffield, the Territorials often formed around local social networks in the areas in which they lived – for instance, in a given small industrial town, the local factory owner would be the officer, the foreman the NCO and the workers the enlisted men (Sheffield 2000). The third consisted of the ‘New Army’ – volunteers with no previous military experience. ‘New Army’ battalions were

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⁵ The book was published in 1967
allowed to form their own units around their home localities, workplaces or social clubs – the ‘Pals’ Battalions’\(^6\). Consequently, ‘New Army’ battalions could also tap into pre-existing social networks. In addition, New Army small units spent 9.4 months together in Britain and then a further 6 months in quiet sectors of the front together to allow esprit de corps to form (Watson 2009).

Of course, as the theory chapter makes clear, such tight social networks can be conducive to group shirking as well as group fighting. There is certainly evidence of First World War British troops collectively deserting (Oram 1988), mutinying (Sheffield 2000) and rioting (Sheffield 2000). There are two reasons why this did not become more widespread.

First, there is clear evidence that civilians at the home front participated in shaming activities for those who were deemed ‘shirkers’ – for instance, handing out white feathers to men of military age seen in civilian clothing\(^7\). So great in fact were civilian sanctions against perceived shirkers that the British Army issued conspicuous ‘silver war badges’ to men honorably discharged from the service through wounds, to spare them from verbal and even physical attacks from civilians when they returned home\(^8\). The Australian Government, for its part, sought to compensate for the lack of a death penalty by deploying shaming tactics against deserters – publicizing their names, home towns and places of enlistment in local newspapers.\(^9\)

Second, where enlisted men believed that their officers and NCOs took care of their welfare and shared their risks, they would be prepared to coordinate on fighting rather than shirking. As Baynes points out:

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\(^6\) [http://www.bbc.co.uk/history/british/britain_wwone/pals_01.shtml](http://www.bbc.co.uk/history/british/britain_wwone/pals_01.shtml)

\(^7\) [http://www.guardian.co.uk/world/2008/nov/11/first-world-war-white-feather-cowardice](http://www.guardian.co.uk/world/2008/nov/11/first-world-war-white-feather-cowardice)

\(^8\) [http://www.nationalarchives.gov.uk/documentsonline/army.asp](http://www.nationalarchives.gov.uk/documentsonline/army.asp)

\(^9\) Pedersen, op cit, [http://www.shotatdawn.info/page38.html](http://www.shotatdawn.info/page38.html)
“For most men an essential part of courageous behavior is their desire to gain the admiration of their comrades, and also of their leaders. Nothing can cause a man more unhappiness than to incur the scorn of someone he admires. By the same token a word of praise from a well-respected figure can steel a man’s self-discipline as nothing else can.

“In the 2nd Scottish Rifles the finest personalities drew the best out of those around them. Men with this power developed to a high degree were Carter-Campbell and Ferrers among the officers, and Chalmers, Culley and Docherty among the other ranks. A great part of their power was due to their own standards of personal discipline. From their example others drew strength.” (Baynes 1967)

Historical accounts from many other units stress a similar pivotal role for key junior leaders in motivation. German intelligence reports of an attack on two platoons of the Royal Irish Rifles suggested that the charismatic leadership of a Lieutenant in one platoon caused it to fight to the last man while the other platoon, lacking such a focal point, surrendered with light losses (Watson 2009).

As the psychologist Charles Bird explained in 1917:

“The leaders determine the morale of the troops, who instinctively are imitators and who regard their officers as symbols of duty, discipline and the nation. At times the loss of an officer may terrorize a company and cause disaster to a regiment.” (Watson 2009)

At the same time, Junior Leaders could punish shirkers in many extra-judiciary ways. Baynes spoke above of displays of contempt, but sometimes these decentralized punishments could go further. He related an incident in a different regiment in which:

“A soldier suddenly started screaming out as a German attack was being launched: ‘Get out! Get out! We’re all going to be killed’. The rest of the men in the trench started to break. There was only one thing to do, and a Sergeant did it. He picked up a spade and hit out with it as hard as he could, splitting the man’s head in half and killing him instantly. The rot was stopped, and the German attack was repulsed.” (Baynes 2009)
Peer monitoring likewise appears to have been at work in World War Two. For instance, novelist George McDonald Fraser, who served in Burma, recalled that:

“Morale, far from being inspired by policy, comes from within, and is nourished by friends, family and example.” (McDonald Fraser 1992)

“Whatever the size of the action, it was the section that mattered to the private soldier. It was his military family; those seven or eight other men were his constant companions, waking, sleeping, standing guard, eating, digging, patrolling, marching and fighting, and he got to know them better, perhaps, than anyone in his whole life except his wife, parents and children. He counted on them, and they on him.” (McDonald Fraser 1992)

“Going into the wood I was scared stiff but not witless; given Aladdin’s lamp I would have been in Bermuda. No, that’s not true; if it were, I’d have kept out of the Army in the first place. Being there, with the choice made, you go ahead – and if anyone says you could always change your mind, and run away, he’s wrong; you can’t. It sounds pompous to say it’s a matter of honor, but that’s what it comes down to.” (McDonald Fraser 1992)

As in the First World War, trusted leaders were essential to making unit cohesion work for the Army’s collective goals. As Colonel TN Grazebrook noted in a report to the War Office after his return from combat in North Africa, the average platoon typically included ‘three or four heroes, three or four irreconcilables’ and a remainder of men who responded ‘in direct relationship to the quality of their leaders.’ (Fennell 2011).

In short, part of the explanation for lower British fighting effectiveness in World War Two lies with the inability of British commanders to impose harsh sanctions on shirkers, which can in turn be traced back to Britain’s democratic political system. Nonetheless, this is not the whole story. For one, it neglects the ability of peer monitoring to keep British troops fighting even when they did not have to fear the death penalty for desertion. Moreover, it does not explain the British Army’s overcentralized command philosophy and skill deficit, which persisted
through both World Wars even though the harshness of British military discipline varied over the same time period.

**7.6 The Funnel**

It is above all in the lower levels of military knowledge and skill of the British Army’s leaders that the roots of its lower levels of destructivity are to be sought.

The major criticism of British tactics in World War Two offered both by the Germans and by Allied and neutral observers centered on their lower level of initiative and imagination. As we have seen, British infantry and (later) armor were said to operate in a very rigid and predictable manner, and had difficulty responding when things did not go according to plan. What these observers did not realize at the time is that the adoption of a rigid, centrally planned and micro-managed fighting style was a deliberate choice by senior British commanders in both World Wars. These commanders often realized the limitations of a centralized command system but simply did not believe that their Junior Officers and NCOs had the training to be able to put a decentralized ‘Auftragstaktik’-style philosophy into action. The infamous human wave tactics of the first day of the Battle of the Somme, for instance, were quite consciously chosen in light of the shortcomings in training of the majority of the British Army at the time. Field Marshall Haig’s Chief of Staff Brigadier-General Sir Launcelot Kiggel put it clearly in a memo to lower level commanders:

“It must be remembered that officers and troops generally do not now possess that military knowledge arising from a long and high state of training which enables them to act promptly on sound lines in unexpected situations. They have become accustomed to deliberate action based on precise and detailed orders…Officers and men in action will usually do what they have been practiced to do.” (Samuels 1992)
In other words, Haig’s strategy of mounting simple massed frontal assaults in such battles was not the blunder of an upper-class incompetent (as frequently portrayed in the popular image of World War One), but a rational response to the suboptimal training the British Army’s lower level leaders had received by that point in the war. Similarly rational in light of this training deficiency was the British Army’s habit, relative to the Germans, of retaining large amounts of responsibility further up the chain of command. British officers would frequently interfere in the decisions of officers two or more steps down the hierarchy (ie Brigadiers interfering in the decisions of Majors), had a higher proportion of officers to men than the German Army and would devote Lieutenants or Captains to tasks performed in the German Army by Sergeants or Corporals (Samuels 1992, 1995). British units were consequently far more sensitive to the loss of officers than their German counterparts, a fact even recognized by the official British history of the war:

“When British troops lost their officers, they were apt to fall back, not because they were beaten but because they did not know what to do and expected to receive fresh orders.” (Samuels 1992)

While some of this lack of tactical skill may be attributed to the difficulty of putting into the field wartime volunteers and conscripts with little military experience, the same problems also occurred with British officers and men who had been regular soldiers before the war. Martin Samuels writes:

“(Regular) Officers and men were expected to achieve a high standard of drill and to carry out detailed orders with rigid obedience. It is clear that the depth of tactical knowledge and the extent of low-level initiative were limited and that actions were therefore not always appropriate to the circumstances.” (Samuels 1992)
For instance, Samuels cites an action in the first month of the war where the professional British soldiers of the Coldstream Guards attempted to stop a nighttime German advance through centrally directed volley fire:

“The fire-commander whistled and then gave the word of command on which the men emptied their magazines into the darkness ahead. The Germans quickly got into the way of this. At the sound of the whistle they rushed to cover and as soon as the burst of fire was over they began to work forward again.” (Samuels 1992)

A similar picture emerges from British command decisions of the Second World War. British commanders in North Africa made numerous attempts to copy the organizational structures which they believed were the key to the German Army’s effectiveness – for instance, merging infantry, artillery and armor into all-arms formations known as ‘battle groups’. However, by late 1942, it had become clear to the British commander in North Africa, Field Marshall Sir Bernard Montgomery, that the British Army simply could not match the German Army pound for pound tactically. However, thanks to Lend-Lease and the concentration of German forces in the Soviet Union, the British did enjoy heavy superiority in terms of men and materiel. Consequently, Montgomery decided to adopt a highly centralized fighting style designed to work around his Army’s prior skill deficiency. A more decentralized system of control would have worked better, given German levels of training amongst the junior leadership, but given the Army the British had, centralization was the best choice. Montgomery believed that a commander ‘had to relate what is strategically desirable with that which is tactically possible with the forces at his disposal’ (Fennell 2011). Montgomery fought a deliberately limited battle in one engagement at Alam Halfa because of ‘the low state of training of [his] army’, ensuring that ‘formations and units were not given tasks which were likely to end in failure’ because of this ‘low standard of training’
Montgomery’s solution proved successful in obtaining his objectives. However the following caveats should be borne in mind. First, victory was far slower and involved far more tactical reverses than would have been the case with a higher level of tactical proficiency. Second, victory would not have been achievable through these means had Britain faced Germany unaided. As noted above, the British not only benefited from supplies of US equipment and money, but also from the enormous diversion of German troops to the Eastern front (Mitcham 2008). Rommel’s forces contained only two German divisions, while the war against Soviet Russia tied down 160 German divisions at the same time (Mitcham 2008). Had Hitler put even a relatively small proportion of his forces in Russia at Rommel’s disposal – Rommel requested only one additional division (Mitcham 2008) – Montgomery’s centralized tactics would have run into trouble.

In short, then, the British Army in both World Wars adopted a centralized command and control system which allowed relatively little leeway for junior leaders to show initiative. This in turn lowered British destructivity relative to the Germans – advances were slower, unforeseen difficulties too easily hampered operations and private information about the battlefield situation was not exploited for the benefit of the Army. British Senior Officers quite rationally adopted this suboptimal system, however, because they believed that British Junior Officers and NCOs lacked the training necessary to make a more decentralized system work. This of course now begs the question – why was British training deficient?
The deficiencies in the pre-World War One training regime for the British officer corps was widely remarked upon by contemporary observers and subsequent historians. Poor junior leadership in the Boer War of 1899-1902 led to the establishment of a Parliamentary “Enquiry into the Education and Training of the Officers of the Army” in 1902. The commission reported great dissatisfaction with the standards at the Royal Military Academy in Sandhurst. Like the German system of strict competitive examinations for entrance and promotion such as the Fahnrichsprüfung, the British officer training establishment required candidates to sit competitive examinations to gain a commission in the Army. However, the Committee stated:

“The Committee regrets to report that the general condition of education at the Royal Military College is far from satisfactory. In the first place, the cadets cannot be expected to derive much benefit from their instruction at Sandhurst when it is clearly established that they have no inducement to work. This inducement is not afforded by the number of marks necessary to qualify for a commission, nor by the fact that those who fail to reach the low qualifying standard demanded are excluded by the Army. Indeed there is too much reason to fear that even those cadets who fail to attain this standard have been commissioned nonetheless.”

The Committee surveyed Commanding Officers of the British Army for their opinions on the incentives of officers to study their profession seriously. Almost all respondents answered that such incentives were not there. A selection of comments is reported below:

“Do you consider that under the existing system sufficient inducements are held out to the young officer to study his profession seriously?

Respondent a: No: the pay is insufficient and the incidental expenses worrying. This should be taken into account by the Committee

Respondent b: I am afraid I do not catch the drift of the question. I do not know that any inducements are held out to young officers to study their profession seriously.

10 Report of the Committee Appointed to Consider the Education and Training of the Officers of the Army, Her Majesty’s Stationary Office, London, 1902, p20
They are obliged to do very little to qualify for promotion, and a few read because they are interested in the profession.

Respondent c: No, I do not, for owing to the present system of training in our Army, it is difficult for the officer to see what good any extra study will do him.”

Also like the Germans, the British Army did possess a General Staff Corps, trained at Camberely in England and Quetta in India (now Pakistan). Entrance to the Corps, as in Germany, was partly through competitive examination and partly through nomination by officers of one’s regiment. However, the entrance exam was far less rigorous than the German equivalent. Shortage of suitable applicants in the years prior to World War One meant that examiners were under pressure not to fail any candidates. Martin Samuels relates the story of one examiner literally dictating the answer to an entrance examination question to a candidate who was having difficulty (Samuels 1995). With little pressure to acquire military specific knowledge in order to advance through the ranks, pre-World War One British Army officers devoted little time to mastering their craft. Instead, sports such as polo and hunting along with social engagements took up a large percentage of pre-war British officers’ time. As Anthony Clayton puts it in an otherwise sympathetic account of the history of the British officer corps:

“Socially the years 1902-14 were la belle époque for the Army’s officers in every branch of the Service in Britain or overseas. Training was not totally time consuming, often finishing by lunchtime and so providing officers with ample opportunities for sport, hunting, shooting and social activities.” (Clayton 2006)

The extent to which the pre-war British officer corps chose leisure over mastering military skills was well known to observers at the time, as illustrated by the following passage in a lament over the state of the Army by one British officer in the Journal of the Royal United Services Institute in 1912:

11 Commission Report, p50
“A very young officer was once heard to say that he hoped our next war would be with gentlemen who would be sufficiently sportsmanlike to arrange their battles in the morning so that troops could get back to camp in time for polo in the afternoon.” (Mozley 1912)

Further down the ranks, entry to the British NCO corps was far less formal and structured than in the German Army. The British Army did not possess the equivalent of the NCO preparatory schools the ‘Unteroffizierschule’. Instead, pre-war British NCOs were enlisted men who had been selected by their officers for promotion based on an informal assessment of leadership potential (Samuels 1992; Baynes 1967). NCOs did have to sit exams to qualify for promotion to corporal and to sergeant; however there was no Army-wide system as in Germany and each regiment administered its own NCO exam. The quality of the exam is said to have varied from regiment to regiment as a function of how much effort commissioned officers were prepared to put into it. The exam for promotion to sergeant in the Cheshire regiment, for instance, tested the applicant’s knowledge of regimental history and elementary sanitation rather than military tactics or theory (French 2005).

Of the training given to both NCOs and privates, an observer writes:

“… good as were the bulk of the regular rank and file, little was done to stimulate their intelligence or initiative. ‘We make the private soldier in many cases a fool’, wrote an officer, ‘because we start with the assumption that he is a fool’. A familiar but to the imaginative pathetic sight was that of three or four soldiers being marched across a square by a non-commissioned officer, presumably incapable of doing some little job otherwise.

It should not be thought that no effort was made to teach men their jobs, or to educate them. The trouble was that instruction was hammered into them with little attempt to arouse their interest. They learnt like parrots.” (Baynes 1967)

The situation between the two World Wars improved a little for the officer corps, but still lagged behind the German Army. The entrance criteria for the Staff Colleges were tightened up.
Nonetheless, the junior officer examinations appear to have been little more than perfunctory, with little suggestion that any candidates were failed (Kennedy 1935). This is in spite of a very low standard of performance. For instance, the Commander-in-Chief of the British Army in India in the 1930’s, Field Marshall Sir Phillip Chetwode, stated that:

“A study of papers sent in by officers sitting for their promotion examinations and even for the Staff College, makes one glad that the results are not published to the world with critical comments by the examiners. Many officers today cannot even express themselves clearly in the simplest language, let alone with any style or distinction.” (Kennedy 1935)

For the Staff Colleges, standards varied from relatively high (in one year in the 1920s, success rates reached a German-style level of 1/8 (French 2000)), to low levels similar to the pre-World War One rate. For instance, Captain JR Kennedy noted that success rates for entry to the two Staff Colleges varied according to unit of origin from just over 20% to almost 70% in the 1930s (Kennedy 1935). Thus although the British Army was beginning to ask more of its officers in terms of training requirements, the gap with the intense system then present in the Reichsheer was if anything widening.

As before the war, this reflected the low incentives for British officers to master military skills for personal advancement. As retired officer Kennedy wrote in 1935:

“It can however be averred confidently that without knowledge an officer in modern warfare cannot perform any of the higher duties connected with an army. Nor would its acquisition encroach unduly on their time. For the theoretical regimental work would not occupy more than one year of intensive application for any one rank. The rest of the officer’s time is, at present, being largely wasted. He is not even expected to acquire a thorough knowledge of the other arms. He accordingly becomes thoroughly bored and his enthusiasm dies early.” (Kennedy 1935)

“We have only to examine the system of promotion to see that it is not designed to ensure that all officers will have an equal chance of rising to high command, given
equal ability. It fails, therefore, to guarantee that the best officers will rise to command, but it does not necessarily even ensure that good officers will rise. Thus it is unfair to the individual and to the mass of officers. For when an officer joins the Army he usually does not do so without hoping to rise to high command.” (Kennedy 1935)

The situation with the NCO corps remained similar to that pre-World War One. NCOs continued to be recruited from within the ranks of enlisted men without passing through the rigorous training and certification of their German counterparts (Corum 1992). Partly in consequence, while the *Wehrmacht*, and later more so the Waffen-SS, promoted a significant number of former NCOs to officer positions, in the late 1930s only 12% of British Army officers had been promoted from the NCO level. The deficiencies in NCO training prior to World War Two thus had two debilitating effects on the British Army’s skill levels in the war. First, it further restricted competition for promotions amongst the officer corps. Second, it meant that when a demand for officers was created by the expansion of the Army at the start of the war, the most obvious candidates to fill it had a lower level of prior training than their German counterparts.

The reason why the standard of training for British officers and NCOs was lower than in the German Army prior to both World Wars is simple. Officers and NCOs had less need to invest time and effort in order to be promoted in the British Army than in the German Army.

This in turn derived principally from the fact that the British Army prior to both World Wars did not benefit as the German Army did from a massive influx of keen applicants for each officer and NCO position. In fact, in almost all of the years leading up to World War One (Spiers 1980) and World War Two (Robertson 1931; Wingfield 1924), the British Army failed even to find enough volunteers to fill all of the available vacancies for the fighting branches the infantry and the cavalry/armor, both in the enlisted ranks and the officer corps.

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12 Questions to the Secretary of State for War in the House of Commons, 1st March 1938, Hansard, p912
In the period under consideration, only the least accomplished sons of wealthier British families in general considered careers in the Army officer corps. In a lecture to the Royal United Services Institute in 1924, Colonel Wingfield noted bluntly that:

“You cannot do away with the idea that the fool of the family is good enough for the Army.” (Wingfield 1924)

Similarly, in the farewell address cited above, Field Marshall Chetwode claimed that:

“I do not think that, as a class, they (British Army officers) have improved in general education, or military instinct and leadership, since the War. If anything, the contrary is the case.” (Kennedy 1935)

Quite apart from the abilities which officer recruits brought into the Army, the lack of connection between efforts to master military skills and forward promotion noted by Kennedy led to British inter-war officers devoting very little time to serious study of military affairs. Instead, British officers devoted the majority of their time to leisure pursuits such as horse-riding, big game hunting, polo, cricket and golf (Kennedy 1935). Indeed, Chetwode and Wingfield both claimed that the lack of knowledge British officers displayed was less a result of low innate ability and more of a lack of effort, which resulted from a lack of accelerated promotion for high achievers (Kennedy 1935; Wingfield 1924).

In short, then, the British Army’s low destructivity relative to the Germans was the result of its difficulty in recruiting men into the peacetime Army. This meant that the British Army had to accept more or less whatever it could get, and had little credible means to expel low achieving officers. British officers responded by devoting little more time or effort than the bare minimum in mastering military skills.

The important question then is – what was the root of these recruitment difficulties?
Two principal problems confronted the British Army in recruiting both officers and men – the ease of entry into civilian alternatives and the difficulty of finding post-service employment for those who left the Army prior to retirement age. Both of these in turn can be traced back to the British liberal market economy system.

In this system, professional associations were traditionally weak and had greater difficulty regulating entry as in countries such as Germany. Also as a result of this, there were few national certifications for vocational trades (Iversen and Soskice 2009). Relations between unions and employers and between unions and the state were generally adversarial (Iversen and Soskice 2009). Finally, economic development was promoted through private enterprise and the market system rather than through large para-statal enterprises such as the Prussian Ministry of Works (Ferguson 1999). Taxes and government spending were kept low and the state bureaucracy small relative to Germany until after 1945 (Maddison 1995; Booth 2001). All of these factors played into the difficulty the British Army had in recruiting both officers and men.

For well-educated young British males of the early twentieth century, civilian life offered a number of attractive and lucrative professions with relatively low barriers to entry. By way of illustration, the Committee on the Education and Training of Army Officers published in their appendix the entrance requirements of alternative careers with which the Army would have to compete for candidates – medicine, law, accountancy, the actuarial profession, civil engineering and architecture. The entrance criteria were relatively easy by comparison with the German counterparts. For instance, the Council of Legal Education (Lincoln’s Inn) required exams only in the English language and Latin, with an exemption granted for holders of any University degree or those who had passed the civil service exam. Neither the Institute of Chartered Accountants
nor the Society of Accountants required a University degree, simply the completion of the equivalent of a high school leaving certificate, the “Junior Locals”\textsuperscript{13}.

Neither law nor accountancy required a university degree for entrance in Britain until the 1950s (Schwartz 2004). In the late 1890s, up to 50% of incoming solicitors had not even taken a high school leaving certificate. This figure had fallen by the 1930s, though it still remained significant at 18% (Schwartz 2004). Applicants for the legal profession were required to make a deposit to the Law Society and to the Customs and Excise. Future Prime Minister David Lloyd George, for instance, had to pay a total of £180 to cover both these expenses in the late nineteenth century (Hattersley 2010). Trainee lawyers and accountants would have to support themselves through their apprenticeship prior to sitting their exam, which could be expensive if they were in a large city such as London (Schwartz 2004). However, they would begin making money as a lawyer or accountant in their early twenties, approximately four years earlier than would their contemporary in the German state bureaucracy (Schwartz 2004).

Entrance into the banks and financial services firms in the City of London was subjected to even less formal regulation. Specific formal qualifications in their trade were not necessary for entrance into these firms. Social contacts were far more important in obtaining employment for individuals in late nineteenth and early twentieth century British banking (Cassis 1994). A large proportion of bankers employed in City firms in the years prior to World War One came from a landowning background – 25% of the sample analyzed by Youssef Cassis (Cassis 1994). Given the prevalence of landowners in the officer corps of all European armies of the time, this is an

\textsuperscript{13} Commission Report
especially telling indicator of the tough competition the British Army faced from civilian life in recruiting officers.

Similarly, early multinational corporations such as ICI and trading firms in British formal and informal colonies overseas such as Hong Kong-based Jardine Matheson provided another lucrative career path for young British men who might otherwise have considered joining the officer corps (Keeble 1992). Competition from such firms especially worried British Army recruiters, as Lt Colonel Robertson pointed out:

“Another factor (in the Army’s recruiting difficulties) is the enormous growth of commercial enterprises of world-wide activity, which now compete with the Services in trying to secure boys of the type we want, who, by their education and upbringing, have developed the powers of leadership and initiative. These enterprises in many cases offer more attractive terms of service and some of them even pensions.” (Robertson 1931)

The second major difficulty in recruiting officers lay in the inability of the British state to find work for them after leaving the service. This too can be traced back to the British liberal market economy system.

In order to maintain a reasonable pipeline of promotions into the upper ranks of the officer corps, the British Army had adopted a rudimentary up-or-out promotion system. This meant that many if not most officers will not be promoted past the rank of Major and will be compelled to retire in their early forties. Officers in this situation faced the prospect of retirement with few transferable skills. This also constituted a serious disincentive for young men to enlist as officers, as was noted by Captain EN Mozley in his critique of the officer corps in 1912:

“The practical question for every keen officer in the cavalry and infantry is this: ‘How, in the comparatively short career that is offered to me, can I get a show of my own which will at once be serviceable to my country in the possible event of war, and interesting and profitable to myself and my men in the certainty of peace?’ The solution
to this question will go far to restore to its proper level the decreasing number of candidates for commissions in the Army.” (Mozley 1912)

29 years later however, the situation had changed little, as recruiter Lt Colonel Robertson pointed out:

“I can only say that in all discussions of ‘the Army as a career’, with schoolmasters and others who have to handle boys and, what is more important, have to advise them on their future career, it is this very factor – a small income at middle age or premature retirement – which weighs most heavily against the Army.

“… But it is this form of fear – premature retirement for the average officer - that leads one to the next general criticism of the Army, namely that it does not qualify its officers to take their place in civilian life. In a sense this criticism is perfectly true, but it must be remembered that these days the Army is a very scientific profession. It takes an officer all his time to keep abreast of his own profession. Nevertheless, the average officer does have to leave the service before the comparatively early age of fifty, by then in all probability he is married, and his domestic responsibilities have reached their most acute stage. His pension alone cannot meet these responsibilities and he must find some means of earning money.” (Robertson 1931)

By this stage, however, entry into the firms which his elementary school classmates had joined would have been very hard for a retired British officer. British firms did not set a great deal of store by formal qualifications, but they did value on the job experience which of course an Army officer of twenty years standing would not have (Keeble 1992).

Retired officers of the Imperial German Heer were often, as we have seen, found employment in the large German state bureaucracy through the Zivilversorgungschein. However, the British state simply did not have any equivalent of the might Prussian civil bureaucracies to soak up retired Army officers. When the Allies had tried to shut off this option through restricting the size of the German civilian state with the Treaty of Versailles, the Reichsheer had responded by equipping exiting officers with the standard civil service exam, also valued by private
employers. However, again, the lack of nationally recognized professional qualifications hampered the British Army’s ability to do this. Consequently, as Lt Col Robertson pointed out:

“Taking the point of view of the officer, who we see has to retire after long years in the service, he is out of touch with the civilian market, and he realizes he must get work and get it quickly. There is no one to help, and he does not know which way to turn, and finally he has no official credentials to back him. If he is lucky enough to be offered anything he takes it at once. The work may not be suited to his qualities….He fails, and begins wandering again, and the employer enlarges on the inefficiency of Army officers in general.

“Taking the point of view of the employer, we see that he does not know what kind of man he is getting and has to employ him entirely on his own statements.” (Robertson 1931)

The relative attractiveness of the Army for enlisted men and hence for non-commissioned officers was similarly low in early twentieth century Britain. Unlike the German Army, Britain maintained an all-volunteer force until 1916 (Hattersley 2010), and then again from 1918 until 1939 (French 2000). Enlisted men engaged for seven years, after which they were expected to return to civilian life if they did not obtain promotion to NCO level (Samuels 1992).

Although the importance of apprenticeships has declined in the British economy with deindustrialization, in the early twentieth century, they were still widespread and it was very important for young males from a working class background to acquire one (Booth 2001). Moreover, those who did not begin an apprenticeship at the start of their career would find it hard to get one later. For this reason, the British Army found it equally hard to recruit working class men into the fighting branches of the Army as enlisted men as it did upper class men into the officer corps. As David French noted:
“At the end of their colour service, most soldiers were confronted with the problem of finding civilian employment without the skills or patronage that enabled their civilian counterparts to find work.” (French 2005)

Apprenticeships were also very important in Germany, but the promise of lifelong civil employment for NCOs through the Zivilversorgungschein was sufficient to compensate German professional soldiers for forgoing them. Professional British enlisted men and NCOs were not so favored.

Soldiers who had left the service tended to look for employment in non-skilled governmental occupations such as the Post Office or county councils\(^{14}\). An alternative and natural source of employment was the police force. However, all of these avenues posed problems. First, the Post Office was far smaller than the German civil bureaucracies and could not absorb all former soldiers itself. County councils, for their part, faced a collective action problem – even if all of them would like to find work for retired soldiers without specific skills, each would rather pass the responsibility for this on to others. The Police, in turn, were restricted in the number of former soldiers which they could take on for two reasons. First, police officers require certain standards of physical fitness similar to the Army, which places a limit on how old a recruit can be when he joins- for instance, 27 was the upper age limit for a new Constable in the Metropolitan Police\(^{15}\). Second, the law required that a certain proportion of police officers be available to maintain order at home in the event of a war. As retired soldiers would likely be recalled to the

\(^{14}\) Commission on the Civil Employment of Ex Soliders and Sailors, p163-164
\(^{15}\) Commission on the Civil Employment of Ex-Soldiers and Sailors, p164, p207
service if a war occurred, Chief Constables\textsuperscript{16} were reluctant to recruit more than a certain number of former soldiers to their ranks\textsuperscript{17}.

In response to concerns about the employability of soldiers and the deterrent effect this was having on recruitment, Parliament established a Committee on the Employment of Ex-Soldiers and Sailors in 1905. Although the committee did not give details of the post-service unemployment rate, it did note the existence of numerous charitable societies for the ‘relief of the distress’ of former soldiers and marines, something which in itself suggests that the problem of post-service employment was acute\textsuperscript{18}. In fact, reports to the Secretary of State for War in the early 1900s stated that the average unemployment rate for retired soldiers was 25\%, far higher than the unemployment rate in the general population. The Commission also pointed out that:

\textquoteleft\textquoteleft\textbf{After the experience of recent years we think it will be generally admitted that the question of a field of employment for discharged soldiers lies at the root of our military system. Unless it is possible for every man of good character to be reasonably sure of employment when his period of service expires, the Army must necessarily fail to attract recruits of the better class. Every ex-soldier who is compelled to tramp the streets with a good character in his pocket is obviously a bad advertisement for the Army, and must have the effect of discouraging others from joining.\textquoteright\textquoteright\textsuperscript{19}

Military historians have often pointed out that the pre-World War One British Army enjoyed low prestige relative to its German counterpart. For instance, the mother of the British Army’s World War One Chief of Staff Sir William Robertson, unusual as he rose to high command from humble beginnings as an enlisted man, reacted to his desire to join the Army as follows:

\begin{footnotesize}
\begin{itemize}
\item[\textsuperscript{16}] US equivalent = police commissioner
\item[\textsuperscript{17}] Commission on the Civil Employment of Ex-Soldiers and Sailors, p164
\item[\textsuperscript{18}] Ibid, p151-154
\item[\textsuperscript{19}] Committee on the Employment of Ex-Soldiers and Sailors, p75
\end{itemize}
\end{footnotesize}
“I would rather bury you than see you in a red coat.” (Woodward 1998)

Yet this is clearly not simply a matter of social prestige but of very concrete material concerns about the future economic prospects of a volunteer. As the Committee also made clear in their report:

“A short time ago a lad enlisted in the militia with a view to getting into the Army, and the next day his mother came along and purchased his discharge, explaining that the reason for doing so was that if her son got into the Army he would have no work to go to when he came out, but that if she knew that he would get work when his soldiering was done, she would have willingly brought him out to enlist.”

The British Army was therefore reduced to recruiting enlisted men for the fighting arms from sections of society whose alternative options were already very low. Specifically, the rank and file was disproportionately recruited from unskilled working class city dwellers and rural Irish agricultural workers. In 1908, Army doctors’ reports suggested that well over 90% of those they had inspected were out of work at the time of recruitment (Spiers 1980). Edward Spiers also cites a slightly different statistic indicating that around 50% of recruits came from an unemployed, unskilled background shortly prior to World War One (Spiers 1980). Even these strata of society did not produce a sufficient number of recruits to generate a positive competition for promotions within the NCO corps or a large stream of enlisted men into the officer corps. In spite of a brief recruitment surge during an economic downturn in 1908-1909, the Army experienced persistent recruitment shortfalls in the years leading up to World War One (Spiers 1980).

After the Second World War, the situation changed little, as the quote by General Deverill cited above makes clear. Poor post-service employment prospects served as a serious

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20 Committee on the Employment of Ex Soldiers and Sailors
deterrent to service in the Army, even in the lean years of the depression. At the height of the downturn in 1931, Lieutenant-Colonel G McM Robertson noted that the British Army suffered from a recruitment shortfall of 11,500 men, almost entirely in the fighting branches such as the infantry. He explicitly related this to the lack of prospects for civilian employment post-service:

“The obvious conclusion is that the infantry holds out the fewest attractions, and that potential recruits, looking to the future, select a trade which will be of use to them on their return to civilian life. Consequently, how to make the infantry more attractive is an exceedingly difficult problem.” (Robertson 1931)

Given that this problem had first been flagged by the Royal Commission in 1905, the question must be posed as to why the British authorities had done so little to remedy it in the interim period.

In fact, the Royal Commission had proposed a number of forward looking reforms. They had proposed establishing a number of vocational training schools where enlisted men would be required to learn skills they could carry into the civilian world21. They had also proposed a standardized certificate of good conduct for soldiers leaving the Army. Unlike the German Zivilversorgungsschein, this would not guarantee post-service employment, but it was hoped that it would be a widely recognized certificate of excellence in the civilian world and hence of great utility to former soldiers in finding employment22. The Commission had even proposed a scheme providing former soldiers assistance with immigrating to Canada, whose economy was growing very rapidly and where emigrating former soldiers might find work in agriculture or the railroads in the newly opened West23.

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21 Commission on Civil Employment, op cit, p176
22 Ibid, p168-169
23 Ibid, p167-168
Implementing the recommendations, however, proved difficult. It is true that the War Office sought to scrimp and save on the system of vocational training so as to appease the all-powerful Treasury. However, the proposals had met with difficulty before that. First, the British system for vocational training was highly decentralized with a lack of nationally recognized standards similar to that pertaining in Germany (Booth 2001), the War Office ran into the issue of whether civilian employers would recognize and accept the certificates awarded by the Army to soldiers graduating from its schools. Consequently, the Army attempted to solve the problem by hiring out soldiers for free to local employers for training. However, in Britain unlike in Germany, this met with decisive union resistance. By the time the War Office moved to emasculate the vocational training scheme through cost-cutting, they had already decided that it faced serious difficulties due to Britain’s liberal market economy system, based on adversarial relations between unions and government and the lack of a system of national vocational certificates (Spiers 1980).

As Lt Colonel Robertson’s quote suggests, the prospects for post-service employment also explains the difference in recruitment performance between the British Army and the Royal Navy. The Parliamentary Committee tasked with investigating the civil employment of soldiers and sailors noted very early on that sailors had far less difficulty with post-service employment than did soldiers. Partly this was because the less physically exacting nature of service at sea meant that they could remain in the service until closer to pension age, but also because the skills sailors learned in the Navy more easily transferred into civilian life.\footnote{Committee on the Civil Employment of Former Soldiers and Sailors, p11}
The professional journals of the Royal Navy, unlike their Army equivalent the Journal of the Royal United Services Institute, did not contain the same frequent jeremiads about the poor employment prospects of retired officers. Instead, journals such as the Navy Review and Brassey’s Naval and Shipping Annual expressed satisfaction with the ability of retired Naval Officers in finding post-service employment. Brassey’s however cautioned its readers against believing that their Naval education alone would be sufficient to find work without some familiarity with business terminology. To this end, the business publisher Pitman and Sons offered a short correspondence course in business methods at reduced cost to Naval officers leaving the service. Although neither Brassey’s nor the Review provide percentage employment figures, the impression given is that this refresher course in combination with the general education they had received through the Navy would be sufficient to find former Naval officers a decent job. Throughout the period, the Royal Navy enjoyed a widespread public reputation as the better educated service branch (Simpson 1979).

Consequently, the Royal Navy always enjoyed a surplus of applicants to positions. In 1936, for instance, Brassey’s Naval and Shipping Annual noted that:

“It is satisfactory to know that the eagerness of British youth to join the Navy shows no sign of abatement.”

Brassey’s went on to state that the Royal Navy had received 25,459 applications in the previous year for only 3,726 vacancies. Even under conditions of wartime conscription, the Navy remained so popular relative to the Army that the British Government had to compel conscripts who wished to join it to fill out forms making the case to the Ministry of Labour as to

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25 Brassey’s, op cit, p19-20; The Navy Review Volume 22, No.4, op cit, p757-758
26 Brassey’s Naval and Shipping Annual, 1936, p19
why they should be allowed to serve there. If the Ministry were not convinced, they would be sent by default to the Army (Reynolds 1939).

Consequently, the Royal Navy’s training and promotion system attained a far greater degree of rigor than that of the British Army. Officers entered into the Naval officer schools at Greenwich and Portsmouth either directly through the public schools or as a Naval cadet through the Britannia Royal Naval College in Dartmouth. They were required first to sit an Acting Sub-Lieutenant’s exam in both Naval specific subjects such as navigation and gunnery and in general subjects with a Naval application such as mathematics, physics and French. They then spent some probationary time on board ship as ensigns, where their sailing and leadership skills would be assessed by senior officers. They then sat a second set of exams both in specifically Naval skills and in more general subjects such as fluid and general mechanics, hydrostatics, statics, algebra, plane and spherical geometry, and dynamics. After a final probationary period onboard ship, they would be commissioned as Lieutenant conditional on satisfactory recommendations from their commanding officer.

At each stage, the incentives of Royal Navy officers to master their craft were high. Candidates who were very successful on their exams and gained good recommendations would gain seniority, leading to faster promotion. Candidates who did very poorly faced the real prospect of being dismissed from the service. The Royal Navy, unlike the Army, could credibly threaten this given the large pool of potential applicants with which it could replace non-performing officers. 27

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27 Report of the Committee Appointed by the Lords Commissioners of the Admiralty to Inquire Into and Report on the Training and Examination of Junior Naval Officers with a circular announcing changes to the Fleet, His Majesty’s Stationary Office, 1901
Thus it is the greater transferability of skills from the Royal Navy into civilian life allowed the Navy to benefit from a large pool of qualified candidates. With this pool, the Navy could generate serious competition for promotion through skills acquisition in a way the Army could not.

Similarly, those branches of the Army which equipped officers and men with skills transferable to civilian life, did not suffer from a skill deficiency relative to the Germans. The early twentieth century British Army had two military academies – Sandhurst for the infantry and cavalry and Woolwich for the engineers and artillery. Given the mathematical demands of the latter two service branches, Woolwich graduates were clearly the more employable outside the military. Consequently, the Commission on the Education of the Officers of the Army of 1902, while excoriating Sandhurst, noted that Woolwich cadets ‘are well taught on sound principles and generally show intelligence and industry in their work’\(^{28}\). In both World Wars, British artillery, logistics and engineering were rated very highly by contemporaries and subsequent historians. The Royal Engineers developed a number of useful technical innovations in both wars, including the tank itself in World War One and specialist amphibious tanks and artificial harbors in World War Two. Logistically, operations such as D-Day were described by military historian Martin van Creveld as ‘a triumph of foresight and organization’ (van Creveld 1977). Woolwich graduates constituted a disproportionate number of Britain’s most impressive Generals, including the chief planner for D-Day Lieutenant General Sir Frederick Morgan, Chief of Staff Alanbrooke and Lieutenant General Sir Percy Hobart, inventor of the amphibious tank (Keegan 1991).

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\(^{28}\) Ward Commission, p15
The relative ineffectiveness of the British Army in World Wars One and Two was in the ‘teeth’ rather than the ‘tail’ of the Army. The funnel argument, stressing the key importance of the second career problem, has no problem explaining this. Alternative explanations of military effectiveness, which often lump all service branches together as uniformly ‘effective’ or ‘ineffective’, have more difficulty.

In principle, the greater difficulties the Army had in recruiting officers and men for the infantry and armor/cavalry could have been overcome by providing much higher pay and more generous pensions to those retiring in their early forties. The problem with this, however, would have been cost.

The desire of the Treasury to keep the pay and pensions of the Army down, which so many contemporary observers regarded as obstructionist (Minney 1960), was in fact wholly comprehensible. Pay and pensions constituted by far the two biggest items in the Army budget29, and as we have seen, they were not particularly miserly in comparison either with those of the Royal Navy or the German Army. As Paul Kennedy and John Mearsheimer point out, Britain’s financial position in the 1930s was indeed precarious (Mearsheimer 1981). Increases in pay and pensions sufficient to induce German-style ratios of applicants to places in the British Army would have scarcely been affordable, as the fact that Britain did indeed run out of money very early in the Second World War shows. Britain’s political and economic structures thus pushed the wages needed to sustain a German level of recruitment into the Army beyond the means of British leaders.

29 Army Appropriations 1928-1935. In 1933, for instance, pay and pensions accounted for just over 43% of total expenditure on the Army
7.7 Conclusion

The British Army of both World Wars thus exhibited a significantly lower level of destructivity than its German counterpart. This led to a series of reverses for Britain, especially early in both wars, which had serious consequences for Britain’s overall geopolitical position. British defeats in World War Two, for instance, are widely acknowledged to have led directly to the dismantling of much of the British Empire. Lower destructivity also led to massive casualties, especially on the Western front in World War One. Britain emerged victorious from both wars in spite of this because it was part of a much more powerful coalition on both occasions. This fact should not blind us to the deficiencies in the British Army’s performance relative to Germany.

It is hard to deny that some of this deficiency is due to Britain’s democratic institutions. The inability of British commanders to use the death penalty in World War Two was clearly connected to democratic restraints – Churchill’s Government wanted to reintroduce the death penalty, but did not believe that they could gain parliamentary approval. As both British and German policymakers grimly realized, one of the best ways to overcome fear of death in battle is with fear of death through fleeing battle. With the ultimate sanction lifted, British troops surrendered more quickly when attacked, often refused to attack themselves when on the offensive and depleted front line unit strength by checking into forward psychiatric units with battle stress. This limited British commanders’ options, gave German commanders more time, and British commanders less time, to respond to developments on the battlefield.

Nonetheless, this is not the whole story. Most British soldiers in World War Two did not desert or surrender in spite of a lack of the death penalty for desertion. Archival evidence suggests that, as with their German counterparts, peer group esteem and loyalty, rather than
broader ideological beliefs, kept them fighting. The same is also true for British troops in World War One.

Moreover, the British fighting style – slow and highly centralized – was the same for most of both wars, even though the severity of British military discipline changed. This suggests that the key cause of Britain’s tactical problems lay outside military law.

The proximate cause of this lower level of destructivity lay in the lack of incentives for British officers and men to devote significant amounts of time and effort to mastering military skills in peacetime. This in turn resulted from the difficulty the fighting branches of the Army had in recruiting men both in the officer corps and the ranks of enlisted men. The peacetime Army had to make do with the human resources it had, which was not a great deal.

These recruiting difficulties resulted from two characteristics of Britain’s liberal market economy system. The first is the relative lack of strong professional associations in the British economy relative to Germany. Therefore, not only was entry into alternative professions for suitably qualified potential officers much easier in Britain than in Germany, but Britain also lacked national vocational certificates which could be used to provide former soldiers with an insurance policy if and when they left the service. The second is the smaller size of the British civilian bureaucracy, which prevented the British Army from being able to offer a dependable guarantee of low skilled public sector work to retired soldiers on the lines of the German Zivilversorgungsschein. Given these difficulties, the British Army struggled to recruit both officers and men in spite of offering levels of pay and pensions at least as good as those in the German Army.
This can be seen all the more clearly in contrasting the Army with the Royal Navy. Although belonging to the same country, the Navy’s training and promotion system was far more advanced than that of the Army. This was because the Royal Navy, like the German Army, was able to benefit from a surplus of recruits attracted in part by the better prospects of post-service employment the Navy offered. The same is also true for the high quality support branches of the British Army – the engineers and logisticians among others.

It should also be stressed that many intelligent, hard working men did decide to join the fighting branches of the British Army in peacetime prior to both World Wars for reasons of patriotism, love of adventure and public spiritedness in spite of the relative unattractiveness of military service compared with the civilian alternatives. The point is simply that because the relative attractiveness of service in the Army was lower in Britain than in Germany, fewer high quality individuals joined, and those who did join had less of an incentive to work to master the military profession.

The deficit of the British Army in terms of skill should also be seen in relative terms. The British Army decisively defeated the Italians in the Western desert campaign (Keegan 1991) before Rommel’s intervention and crushed the pro-Axis Iraqi Army of Rashid Ali in just over four weeks (al Qazzaz 1976). The lower level of destructivity relative to the Germans simply reflects how good the various German military forces really were. Moreover, revisionist historians are correct to point out that in the gap in destructivity between Britain and Germany narrowed over the course of both wars, especially World War One (Sheffield 2001; French 2000). This is entirely to be expected given the logic of my theory. War-time conscription suspended the usual difficulty the British Army had in recruiting men. Those who survived years of trench
warfare had learned a reasonable degree of military skill ‘by doing’ on the Western front. Simultaneously, the highly trained pre-war German officer and NCO corps were gradually worn down in combat and replaced by less well trained wartime appointees. In these circumstances, a degree of convergence is unsurprising. Nonetheless, the price which the British Army had to pay in the meantime because of pre-war skill deficiencies was enormous – the first day of the Battle of the Somme, for instance, costing more dead than all post-World War Two British wars combined (Sheffield 2003).

However, the comparative cases of Britain and Germany should lead to caution over the idea that soldiers from democratic armies will fight with initiative because this is what democratic ‘culture’ promotes. Initiative requires military knowledge, which individuals must be given incentives to acquire. States which do not look after their veterans today will have difficulty making these incentives credible for incoming soldiers of the future. Care for veterans is often couched in terms of justice, which is entirely fitting. It is also, however, a key component of destructivity.

The table below summarizes the predictions and relative performance of my and other theories of destructivity.
8. Conclusion

This dissertation has not only shed light on the many of the key macro-level determinants of destructivity, but outlined compellingly the causal mechanisms at work. The worth of my theoretical ‘funnel’ has been shown at both entry points – the lower level, enlisted men entry point and the higher officer corps entrance.

At the enlisted level, literacy is the key restriction on the proper functioning of the funnel. States with low levels of literacy will struggle to recruit literate NCOs and so their commanders will have very little confidence in the ability of lower levels of the Army to fight effectively without close direction and supervision. The result is tightly concentrated formations and over-centralized, hierarchical decision making, hamstringing the Army’s ability adapt quickly to unforeseen developments and to adopt the essentials of the modern system.

At the officer level, by restricting access to the officer corps for qualified and motivated individuals, coup proofing damages the positive competition in skills acquisition which is another key determinant of destructivity. States which are ‘naturally coup proof’ – because they have never, or have not recently, suffered a coup – need not engage in such restrictive practices and so enjoy a significant advantage.

At both levels, the combination of good alternative options to military service at the point of entry, and poor civilian employment prospects after retirement, also damage skills acquisition and destructivity.

In terms of combat motivation, the case studies strongly suggest that the peer monitoring mechanism is the key. Soldiers are motivated to fight not by the grand causes which politicians
frequently use to justify their wars, but by loyalty to the men alongside them and their immediate superiors whom they know and trust. Men risk their lives to avoid the shame and social sanctions they may incur by having let their friends down. This is a recurrent theme in accounts by fighting men of many nationalities across numerous times and places. Of course, soldiers may also believe in the justice of their cause or subscribe to their state’s ruling ideology, but this is now what actually gets them to fight when the bullets start flying. Similarly, the role of harsh negative sanctions in motivating troops to fight is more contingent and nuanced than many might think. Clearly they are not the be all and end all of troop motivation – or Saddam Hussein’s forces would have been all triumphant. Yet at the same time, they are not entirely ineffective either. As the German and British cases show, harsh negative sanctions work most effectively to deter the most obvious and observable forms of shirking – desertion, flight, or mutiny. However, military shirking can take a whole range of different forms, many of which are not observable to superiors and which cannot, hence, be deterred through punishment imposed from above. In some cases, shirking actually means choosing the ‘safe’ course of action proscribed by one’s superiors rather than using one’s private knowledge of the battlefield to take a calculated risk and advance the overall strategic goals of the operation. Imposing negative sanctions in cases where it is not clear that shirking rather than poor luck or difficult circumstances account for the operational outcome simply encourages troops to do the minimum necessary to avoid punishment, as the Iraqi case shows.

Of the other explanations examined in this dissertation, national income per capita is also related to destructivity, even controlling for literacy. Here the causal mechanism is more nebulous and the correlation weaker and less robust. The ‘strong state’, better medical care and more advanced operations management techniques mechanisms are doubtful. More likely, the ability to
produce more high technology weaponry domestically is a contributory factor. However, it is also possible that the national income per capita variable is proxying for the extent of corruption within the military, where cash payments for promotions undermine the incentives for the acquisition of military skill.

Many other variables, however, which had long been thought to be related to destructivity, turn out on closer inspection not to be. Ethnic fragmentation, for instance, has no influence on military effectiveness, nor does a state’s geopolitical vulnerability. These findings would surprise many political scientists and historians.

This dissertation has laid the groundwork for a solid theoretical understanding of military effectiveness – destructivity. In my conclusion, I will first outline the theoretical relevance of my work and how it fits in with the existing political science literature. I will then proceed to outline some promising avenues for future research, including potential applications to non-inter-state wars. Finally, I will move to the policy implications of my work, especially what I term the ‘64,000 yuan question’ – how tough really is the Chinese People’s Liberation Army?

8.1 Theoretical Findings

As explained at length above, one of the key findings of this dissertation is the relationship between literacy and destructivity. Many observers have made this connection since at least the days of the Franco-Prussian War – yet mine is the first direct quantitative evidence for this proposition and the first work to outline precisely the causal mechanism linking destructivity to literacy. The mechanism is this – the ‘modern system’ in conventional warfare requires a significant amount of decentralization of decision making on the battlefield. In fact, the basic unit
of the modern Army is around eight men, commanded by a non-commissioned officer. These NCOs are usually drawn from the poorer but not poorest sections of their home society – what Edwardian Britain would have called the ‘upper’ or ‘respectable’ working class. In states with low levels of basic literacy, individuals coming from such strata who can read will have far better employment options than service in the military as a corporal or sergeant. The military will therefore have to use as non-commissioned officers individuals who cannot, or can hardly, read. This will not necessarily affect the training of such NCOs – one can be shown how to fire and maintain a rifle without recourse to written material, for instance. However, it will strongly affect these NCOs’ military education – instruction in practical and theoretical military knowledge which would allow the individual to devise novel solutions to unforeseen problems on the battlefield. An Army with illiterate NCOs will be able to provide them with very little military education. Consequently, the senior command will have very little confidence in the ability of the NCO corps to operate effectively without close supervision. This requires tighter formations and less decentralization of authority, but this in turn makes one’s Army a far easier target for enemy firepower.

By contrast, even societies with low levels of overall literacy do tend to have a literate elite large enough to produce an officer corps. Even Ottoman Turkey, the least literate war fighter in my dataset, had a 100% literate officer corps with a decent military academy and staff college based on the German model (Erickson 2007). This leads to a temptation on the part of senior officers to use junior officers as de facto NCOs – however, this simply produces astronomically high junior officer casualties. Soon the Army faces a shortage of junior officers in addition to problems with the NCO corps. Enemy forces know that they need only eliminate the officers to leave the enlisted men and NCOs effectively helpless. Alternatively, the Army may attempt to
more or less do without an NCO Corps at all – the Ottoman Army fielded only 1 NCO per company (1:150 men), compared for instance with 6 per company in the French Army and 12 for the Germans (Erickson 2007). As the above discussion suggests, this is an issue of relative literacy – a state with only 50% literacy will have high destructivity fighting a state with 10% literacy, but will be just as comprehensively outfought by a state with 99% literacy.

At this stage, the question should be asked as to whether this literacy variable is simply a proxy picking up the effects of something else. In a sense, there is something to this. The definition of literacy used by the Banks Data and picked up in this dissertation collapses literacy into a dichotomous 0-1, literate/illiterate, variable. In reality, as the Education Departments of modern developed states recognize, literacy is more of a continuous variable ranging from very basic to very high levels of competence. The dichotomous Banks variable is convenient for macro-comparative statistical purposes because it is by far the most temporally and geographically comprehensive measure of literacy around. Yet as micro level economic history studies of 19th Century Western Europe have shown, it is also a very good proxy for overall reading competence (Vincent 2000). Societies which score poorly in terms of the percentage of their population who are completely illiterate will also have high proportions of individuals with no more than basic competence in reading and writing.

Is literacy proxying for something else entirely? Several contenders have been put forward.

The first is that it is a proxy for state capacity. This elusive concept is most famously advanced as an explanation for the onset of civil war by James Fearon and David Laitin (Fearon and Laitin 2002). In their view, state capacity is partly about the level of information a state has
about its own citizens and partly about its presence or footprint across all of its territory in the form of police and other state employees (Fearon and Laitin 2002). These in turn feed into the state’s ability to monitor and control its citizens’ activities. A weak state, in this view, has little information about its population and little physical presence especially in rural or peripheral areas of the country. Weak states clearly would have greater difficulty achieving high levels of literacy – they would lack the tax gathering apparatus to pay for elementary schooling and the employees to go to peripheral areas to teach reading and writing.

This could in turn affect destructivity in a number of ways. First, such a state would have less capacity to tax and/or draft its citizens in wartime. This would obviously show up in lower levels of manpower at the frontline and inferior equipment and logistics deriving from low military spending.

Second, a weak state would have far greater difficulty tracking down and punishing deserters. Recall that the individual soldier’s decision to fight or shirk is partly a function of his expectation of the probability of being caught. A weak state, lacking information on the whereabouts of its citizens and lacking police or other security force personnel to apprehend soldiers who have absconded, may have difficulty getting them to stand and fight.

Closer examination of the quantitative and qualitative evidence suggests, however, that neither of these causal mechanisms are empirically compelling. For one thing, if the state has difficulty drafting troops and paying for them, then this should show up in the statistical section in positive and significant effects of the relative number of troops and relative military spending per head variables. Instead, both of these variables are insignificant while literacy is highly significant. To give some additional historical evidence, it is true that a state such as Imperial
Russia suffered both from a low level of literacy and from difficulties raising taxes and equipping and transporting troops. Yet with the number of troops the Russians were able to raise, pay for and transport to the Front to fight the Germans, they should still have been sufficient to ensure victory had they not also suffered from debilitating tactical deficiencies at the front line. For instance, in the crushing German victory at the Battle of Tannenberg, the Russians fielded more than twice the number of troops as the Germans and significantly more artillery and small arms (Clodfelter 2002). This is backed up by the quantitative evidence in the statistical chapter – including miles of railroad per square mile in the regression does not change alter the relationship between literacy and destructivity, and the rail variable itself is not significant.

The second mechanism – the state’s ability to monitor its population and its resultant ability to catch deserters – is harder to evaluate. Statistically, some measure of this variable is lacking for the states and time periods considered in this dissertation. Nonetheless, brief examination of a few ‘most likely’ cases suggests that it, too, is unconvincing. For instance, Ottoman Turkey, as stated above the least literate state in my dataset, in fact fielded a very extensive state security apparatus. The Ottomans maintained internal security with a paramilitary police force known as the Gendarmerie. In the late 19th Century, Turkey deployed more gendarmes per capita than the leading German state of Prussia (Ozbek 2008). In comparison with the Entente powers, in 1913 Turkey also had more gendarmes per head of population than England and Wales had police officers per capita shortly after the war in 1921 (Statesman’s Yearbook 1913; Dixon 1929).

Similarly, Iraq under Saddam, although not one of the absolutely least literate states in the dataset, nonetheless suffered both from a severe literacy deficit relative to the United States
and a very one sided loss exchange ratio. Iraq is therefore a ‘somewhat most likely’ case for the proposition that it is state weakness not literacy per se which is the key driver.

Here, however, we again find that low literacy does not appear to correlate with a state’s inability to monitor and control its population. Saddam had numerous intelligence agencies to spy on his population. The main agency – the *Mukhabarat* – has recently been discovered to have maintained personnel files on almost every single Iraqi citizen (Sassoon 2011). The *Mukhabarat* was assisted by a network of informers whose extent is still not known with certainty (Sassoon 2011). However, Joseph Sassoon points out that informers were assumed by Iraqi citizens to be ubiquitous and suggests that almost all Iraqis may have been an informant at some stage during Saddam’s rule (Sassoon 2011). It was precisely these informants whose job it was to track down deserters (Sassoon 2011). Even if a deserter were able to escape these informants, principally by escaping to a foreign country, he knew that his family remaining in Iraq would be targets for Saddam’s retaliation (Sassoon 2011).

In short, state capacity is not a convincing alternative explanation to literacy. Numerous control variables which could also be said to proxy for state capacity – government spending per capita, years of education, GDP per capita, miles of railroad per square mile and military spending per troop- proved insignificant statistically next to literacy. Indeed, the assumption of a strong, linear correlation between state capacity defined in Fearon and Laitin’s terms as the ability to monitor and control the population and either literacy or development more generally is questionable. Consider the contrast between the strong but underdeveloped states of Zimbabwe and North Korea on the one hand and the wealthy but weak state of Italy on the other.
Beckley provides a number of potential causal mechanisms linking the wealth variable to destructivity, other than through literacy. He points out that developed states might be able to buy and maintain better weaponry, hire better soldiers, provide better medical care to the wounded, pay for professional military establishments such as staff colleges and military academies and sponsor useful research into operations management (Beckley 2010). Of these arguments, both the first and the last may potentially account for the significance of the GDP per capita variable, even controlling for literacy.

Most statistical analyses of battles (including Beckley’s own) have included spending per troop and equipment deployed as control variables and found them to be insignificant. As we can see from the case of Iraq, states rich in cash but low in literacy can buy in expensive equipment from overseas but fail to use it properly. Nonetheless, the global arms market is scarcely characterized by perfect competition, which makes defense spending a very imperfect indicator of technological quality. Wealthy states provide advanced weaponry at below cost to their allies, and deny it to their enemies. Consequently, having a high quality industrial base to produce one’s own weaponry is still important. One cannot simply import it all from a wealthy benefactor, as Beckley correctly notes.

As for hiring better soldiers through higher pay, this misses the point that the Government is in competition with private employers. Given that modern states hire soldiers almost exclusively from home country nationals, the key variable is not how much the state can pay in absolute terms but how much it can pay relative to private employers in the same country. There is no reason to believe that this variable will be higher in wealthy countries than in poor
ones – in fact, it may well be lower, given that only wealthy countries will tend to have large corporations which can compete with the state in terms of pay and conditions.

Medical care may have some impact, but it is hard to see that it is decisive. For instance, loss exchange ratios are calculated as the attacker’s dead and wounded relative to those of the defender. If one side is better than the other at saving wounded soldiers then this will not show up in the loss exchange ratio which treats both dead and wounded as interchangeable. In the case which Beckley cites of the United States versus Japan in World War Two, Japan’s high losses were surely more a function of the Japanese High Command’s insistence on foolish and fruitless frontal assaults than of deficient Japanese medical care.

As for professional military establishments, it would surprise many analysts to learn how ubiquitous they are even in very underdeveloped countries. As we have seen, Iraq’s military establishment was highly sophisticated and its professional (as opposed to political) products would have fit well in the officer corps of a far more developed state. The Iraqi military produced operational analyses of past encounters just like a Western military and was even on the road to developing its own military theoretical journal¹. Military academies, staff colleges and military universities also exist in other developing states such as Pakistan², Nigeria³ and India⁴.

The final mechanism- the sponsorship of useful research into operations management – may have some merit. One might consider the impact of the array of training and tests West Point students are subjected to on leadership skills and personality, or the research into unit cohesion and fighting power. Nonetheless, many of these human resources management techniques are

¹ Interview with Major General Aladdin Hussein Makki Khamas
³ http://www.nigeriandefenceacademy.edu.ng/
⁴ http://nda.nic.in/
standard to business as well as the military and are often easily obtained and copied even by
states which did not originally develop them. For instance, recent research indicates that the
Chinese military have developed a bespoke version of the American Myers-Briggs personality
test (Kamphausen, Scobbell and Tanner 2008).

In short, then, literacy is not a proxy variable for wealth. Both have independent and
positive effects on a state’s destructivity.

At the officer entrance point to the ‘funnel’, the level of coup risk is the key factor.

Coup risk is proxied by the relative years coup free variable. This variable is designed to
capture the extent to which a state is ‘naturally’ coup proof, without the need for further measures
hampering destructivity. The longer a given state has been without a coup, the stronger are the
mutual expectations among Army officers that they will not be able to garner any support if they
were to move against the civilian leadership. Remain coup free for long enough, and eventually a
military takeover in a given state will appear unthinkable and faintly ludicrous, as in the modern
United States or Great Britain. Knowing this, a ‘naturally coup proof’ leader will have little need
to engage in political favoritism in recruitment and promotion. In turn, military officers need to
devote themselves to the mastery of military specific skills rather than cultivating political
loyalty.

Nonetheless, in many models this variable has a weaker effect on destructivity than
literacy does. There are many reasons for this.

The first is that coups are a very rare and risky collective action problem. Thus even coup
vulnerable leaders like Saddam Hussein have quite a lot of margin for error. Saddam was able to
scrap many of his own most damaging coup proofing policies when the external threat from Iran
loomed large without being overthrown. This is even more so in large Armies, where the
coordination problem is much exacerbated.

The second is that only certain ranks of the Army pose a threat to the incumbent leader,
and again the number of these ranks decreases the larger the Army is. A leader has relatively little
to lose from allowing promotions to NCO and Junior Officer to be made on the basis of
competence than to Senior ranks. Thus coup proofing is less severe of a factor in the lower level
tactical competence of the Army than in its strategic direction and to some extent its operational
performance.

The third is that there are various means which coup vulnerable leaders have hit on to
protect themselves from overthrow without undermining destructivity. Stalin’s ‘edinonachlie’
system, later copied by Saddam, posted party commissars with a vested interest in the
maintenance of his rule to act as ‘fire alarms’ against any potential military coups. As long as
these commissars were not given dual authority over decision making with professional military
officers, this system worked well both for coup proofing and destructivity. The adoption of
edinonachlie by the Red Army in 1941 led to a large increase in its fighting power (Glantz 2005),
as did adoption of the same system by the Iraqis in 1986 (al Marashi and Salama 2008).
Similarly, parallel military organizations, in my view, do work well to prevent coups but do not,
in and of themselves, hamper destructivity. It is hard, for instance, to see how the German Army’s
high tactical competence in World War Two would have been any higher had the Waffen-SS
been incorporated into the Wehrmacht, or how Iraq could have fared much better in Desert Storm
with the Republican Guard out of the picture.
Thus, in short, coup proofing through the politicization of officer recruitment and promotion does negatively impact destructivity. However, low levels of literacy hurt more. A coup vulnerable but highly literate state would enjoy an advantage over a coup proof but low literacy one. If two states, both of which have universal literacy, face each other, the one which has been coup free longer will enjoy higher destructivity. If two states are both coup free and enjoy universal literacy, then neither state can expect a crushing superiority over the other. Rather, marginal advantages will accrue to the state whose economic structure provides good post service employment opportunities and relatively poor alternatives to qualified potential soldiers. The experience of Germany most closely bears this out – the German Army’s qualitative edge over the Allies persisted throughout both World Wars even though the technological balance between the two sides varied. Of course, at the extreme where one side was less well trained and led but armed with heavy armor, predator drones and laser guided missiles and the other with bows and arrows and spears but better trained, technology would win out. Nonetheless, a little bit of skill can usually counterbalance a lot of technology, as Stephen Biddle points out (Biddle 2004). This has clear implications for spending priorities – a dollar, pound or euro spent on making military service attractive for quality candidates through pay, pensions and educational opportunities has a slightly bigger payoff at the margins than spending on very high technology weaponry.

The closest quantitative proxy for the market structure account is the government as a percentage of GDP variable. As we can see from the British and German cases, the large German civilian state gave the Germans an advantage over the British in terms of military recruitment. British post-service employment was left in the hands of the private sector, which was reluctant to hire former soldiers without obvious transferable skills. Looking down the road, potential British
officer candidates were deterred from military service by the prospect of such premature poverty. This stymied the quality of entrance and competition for military skills in the British Army relative to its German counterpart prior to World Wars One and Two. German officer entrants, however, had the incentive of the Zivilversorgungschein, which allowed successive German rulers to recruit high quality personnel who competed ferociously through the acquisition of military knowledge. It is this incentive structure which, more than anything, explains why early twentieth century Germany produced what many military analysts consider to be the finest example of a modern professional military. The British Army, by contrast, stagnated in pre-war times as a bastion of gentlemanly amateurism. That this skill deficiency did not cost Britain both World Wars is mostly to do with the large numerical and material superiority which the Alliances of which Britain was a part. Nonetheless, German military skill almost allowed it to win both World Wars on many occasions, something which a comparison of German material power with that of the Allies would never have led one to expect.

The government size variable, however, is not of huge substantive significance. The difference in destructivity between Britain and the United States on one hand and Germany on the other is marked, but not as enormous as that separating the modern United States from, say, Iraq. Both Britain and the US, like Germany, enjoyed universal literacy and so had a pool of literate officers and NCOs who could be called on in wartime even if they could not be recruited in peace. Thus over the course of both World Wars, British and American destructivity increased relative to Germany, although it never quite caught up. The modern United States has, moreover, gone much further in resolving the post service employment question which so vexed the British, in spite of the two countries’ similar liberal market economy structures. The US has done so by
providing educational benefits for enlistment rather than guaranteed state employment as Germany did traditionally.

However, this solution is not as neat as the Zivilversorgungschein. It does not guarantee post service employment, for one. This is a more severe problem in economic downturns such as the one we are currently facing. Moreover, in good economic times, it replaces the recruitment problem with one of retention. A traditional German officer would join the Kriegsakademie knowing that he would have a job for life within the state infrastructure if he performed well militarily. He therefore had only to devote himself single-mindedly to the military profession. A modern US officer by contrast knows that he can parlay his educational benefits into civilian employment after only one or two terms of service. The incentive to devote oneself fully to the military profession is therefore lower.

Thus for states of equal literacy and coup invulnerability, the size of the civilian state bureaucracy is a key variable. It provides a natural avenue for retired servicemen and so provides incentives for high quality candidates both to join and to remain within the officer corps.

Before looking at avenues for future research, I will briefly consider the ‘dogs which did not bark’ – variables which did not attain significance in spite of strong prior reasons to suspect they would.

Many military historians would be surprised that the degree of external threat – however it is operationalized – would be insignificant (Shamir 2011). In this, they have been misled by one or two prominent cases of highly vulnerable states which are also very militarily effective – Germany and Israel. What they failed to notice was that the neighbors of these states were also highly vulnerable and yet failed to develop high destructivity militaries – think Poland and
Lebanon. Even close analysis of the German and British cases, where differing geopolitical vulnerability might be thought to provide an explanation as to their differing levels of military effectiveness, suggests other factors were more important. In fact, officers of the British Army received better pay and pensions than those of either the German Army or the British Navy, something which a ‘needs’ based explanation of destructivity would have a hard time explaining. Germany acquired a highly destructive Army not because its leaders recognized its vulnerability and so paid through the nose for top quality military officers, but because its government and market structure allowed it to recruit such officers on the cheap.

The lack of effect of ethnicity is also surprising to many students both of military effectiveness and of inter-ethnic cooperation in general. Why is it the case that a finding which seems to hold true at the micro-level – ethnic diversity inhibits cooperation – does not hold true at the macro level, at least where war fighting is concerned? Why is ethnic fragmentation insignificant when so many famous cases of militarily ineffective, ethnically fragmented states exist?

The answer to the second question is clear. Many of the most ethnically fragmented war fighters either had other significant problems besides ethnic diversity or were in fact fighting states far more diverse than themselves. As we have seen, Iraq is in fact less diverse than either Iran or the United States by all standard measures. Moreover, the most ethnically diverse states in the dataset included Ottoman Turkey, Imperial Russia and Austria-Hungary, all of which also had low levels of literacy. Ethnically diverse states with high literacy levels – such as the United States – did far better than ethnically homogenous states with low literacy levels (North Korea and China in the Korean War). More striking, however, is the relative performance of the
Austrian and Italian Armies in World War One. Both states had almost identical literacy levels, neither had had a coup but Austria was one of the most diverse, and Italy one of the most homogenous states in the dataset. Strikingly, however, it was Austria rather than Italy which enjoyed a qualitative edge. In the twelve Battles of the Isonzo, the Austrians inflicted disproportionately high casualties on the Italians. Only with much help from the Western Allies were the Italians finally able to defeat the Austrians at Vittorio Veneto in the final weeks of the war (Clodfelter 2002).

The deeper reasons for this finding are harder to discern.

Selection effects are unlikely to account for it. Relative ethnic fragmentation is not associated with dispute onset or escalation or war outbreak. Moreover, if selection effects were present once the war began, one would expect that the attackers in the dataset would be more ethnically homogenous than the defenders. In fact, the ethnic fragmentation levels of the attackers are significantly higher (at the 1% level) than those of the defenders, as the table below makes clear.

**Table 7: Ethnic Fragmentation of Attackers and Defenders**

<table>
<thead>
<tr>
<th>Ethnic Fragmentation</th>
<th>Attackers</th>
<th>Defenders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>.401</td>
<td>.317</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.211</td>
<td>.01</td>
</tr>
</tbody>
</table>

These considerations suggest that more ethnically diverse states are not selecting themselves into battles or wars on the basis of some auspicious private information about their likely performance.
A likely alternative is that many ethnically diverse states follow policies of selective homogeneity in their militaries. Some, for instance, reserve all or most of the fighting units for members of one ethnic group (usually the politically dominant one), with subordinate minorities being relegated to support functions. Examples of this include the Soviet Red Army (Henderson 1986) or the Ottoman Turkish Army (Erickson 2008). Alternatively, other militaries maintain ethnic homogeneity at the small unit level with integration at higher echelons. The British Indian Army, with ‘ethnic’ regiments such as the Rajputs, Jats and Ghurkas, is a classic example (Rosen 1996). In this scenario, most individual soldiers in the firing line will only ever encounter fellow ethnics in the same small units. Inter-ethnic cooperation then occurs only higher up the chain, between battalion or brigade commanders who have less need to trust each other than men at the front.

More hopeful from a normative perspective however, is the view that serving together in the military can help to overcome ethnic divisions rather than foment them. This has certainly been the American experience, but there is reason to believe that it is not limited to the United States. The American experience suggests that where the state makes a reasonable effort to incorporate ethnic minorities and treat them well, it can elicit cooperation between members of different ethnic groups even in the extreme circumstances of war. At the very least, this finding carries the hopeful implication that a state’s ethnic diversity in and of itself is not an insurmountable barrier to being able to defend itself.

8.2 Future Directions for Research

This dissertation has been especially fruitful in generating new avenues of research.
The finding that literacy is so clearly related to fighting effectiveness raises the question of whether national security concerns are, in turn, a key determinant of literacy. Differently put, under what circumstances will external threats lead to improvements in basic literacy? State leaders have recognized at least since the Franco-Prussian war the military advantages of universal literacy\(^5\), and yet many states have consistently failed to achieve it. The political economy of development literature has numerous explanations—based on domestic coalitional politics—for why states would fail to spend money on building basic mass education, but this literature has not considered whether external security threats also play a role. Do domestic coalitional politics always win out over national security concerns when it comes to education, or is international security competition a key but as yet unappreciated driver of improvements in literacy? Under what circumstances might the degree of external threat win out over domestic politics when it comes to spending money driving improvements in literacy? One key insight of the political economy of education literature is that education spending is characterized by a time inconsistency—spending money on elementary schooling to raise literacy standards now produces growth not for current incumbent leaders but rather for their successors ten to twenty years down the line. Similarly, teaching five year olds to read now will not affect the current Army’s destructivity but rather that of the Army a decade or more in the future. Consequently, the impact of the external security threat on the growth of literacy might actually be interactive with average leadership tenure. Leaders who expect to still be in power decades hence will internalize the security benefits of increased literacy in a way that short-lived leaders do not.

\(^5\) For instance, the French National Assembly’s debates on the Loi Ferry included a reference to illiteracy as a ‘dagger aiming at the heart of our Republic’ given the military threat from Germany. Chambre des Deputes, Séance du Samedi 4 decembre 1880. http://www.assemblee-nationale.fr/histoire/loiferry/seance4dec.pdf
A second research project relates to the selection effects problem and attempts to bridge the gap between studies of conventional wars and insurgencies. As we have seen with the case of Iraq in 2003, it is puzzling why many militarily weak states have chosen to fight conventional wars against stronger opponents where at first blush it may appear that they would do better to fight a guerilla war. In fact, there exist very few examples of states choosing to shift directly to an insurgency when attacked by a stronger foreign state. Few European states did so against Germany in World War Two – resistance movements only arose after the defeat of these states’ conventional forces and these movements were not pre-planned by their governments prior to the German invasion (Evans 2009). Churchill did plan a British ‘insurgency’ in the event of a German invasion, but this was to take place only if and when conventional British forces were defeated (Fleming 1957). At the same time, as the Hezbollah example shows, many actors not usually described as ‘states’ have nonetheless resorted to more or less conventional tactics at times. Conversely, many states have used guerilla rather than conventional forces to attack stronger enemies – for instance, the use of the PLO and other Palestinian organizations against Israel by some Arab states, the use of the ANC and other African liberation movements by black African governments against white supremacist regimes in Rhodesia and South Africa and the use of various Kashmiri separatist groups by Pakistan against India. These cases suggest that conventional military weakness is a necessary but not sufficient condition for a state to switch to guerilla tactics. As the Iraqi case shows, high levels of trust are also required to allow an insurgency to take hold. What determines these trust levels, however, is unclear.

This then raises the question of the extent to which my theory is transferable to non-interstate wars. As outlined in the introduction, a substantial proportion of non-interstate wars are in fact fought using relatively conventional means. CoW and other databases do not classify these wars as interstate because one or more of the two sides is not recognized by the international community as a bona fide state. While this coding rule may be fine for some purposes, it is irrelevant for mine. More important for my theory is how the armed group is organized and whether it seeks to capture and hold territory. Actors such as Hezbollah which attempt to do so are, for my purposes, effectively state armies even if not legally recognized as such. I would also expect my theory to be at work in these cases and there is much evidence that it is. As Biddle and Friedman reported, Hezbollah represent the most effective conventional foe Israel has ever fought. From the point of view of my theory, this is not necessarily surprising – Lebanon today enjoys a higher literacy rate than any Arab state did in the years in which they fought Israel, indeed higher than any other Arab state today at 89%. Moreover, the areas of the country which it runs, Hezbollah is well known for providing effective public services, including schools. My theory would suggest that this ought to allow Hezbollah to recruit literate individuals for service as ‘NCOs’, whereafter they can receive a military education in conventional tactics. If this is indeed the case, this would explain why they were able to perform so much more ably against the IDF than any previous Arab Army.

For wars further along the conventional end of the scale, my theory has less applicability. In the ideal type, ‘pure’ non-conventional war, rebel groups are aware that they cannot match a conventional Army in protracted firefights and so seek cover amongst the population. The key to

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success, then, is to solve the ‘identification problem’ – figuring out who is and is not an insurgent. Once the insurgents’ identities and location have been determined, defeating them is a relatively straightforward affair, given their general lack of training and skill. Yet this process of identification is itself extremely difficult (Kalyvas 2006).

Analysis of my data combined with Jason Lyall and Isaiah Wilson’s on insurgencies shows that the incumbent’s literacy scores correlates very highly with being a foreign occupier (Lyall and Wilson 2010). Small unit leaders from highly literate countries may have an advantage in terms of their military education, but local troops, understanding the language and customs, and perhaps benefiting from a ‘home court advantage’ in terms of popularity with the locals, are more likely to elicit the information crucial for success. For instance, Andrew Roe reports that the early twentieth century British Army found local Pashtun ‘scout’ detachments far more effective facing insurgents in the North West Frontier than regular British troops (Roe 2010).

To this there is a major potential objection - won’t troops from more highly educated countries be more able to execute the kinds of public works projects which are most likely to win ‘hearts and minds’?

This objection is correct in a sense. Militaries from more highly educated states will be more likely to use ‘nice guy’ hearts and minds strategies in fighting COIN simply because they can. Only militaries such as these will be able to provide local public goods such as health care, sanitation, electricity and other forms of infrastructure. This is not, however, necessarily synonymous with COIN effectiveness – information about insurgents’ identities can just as easily, if not more easily, be obtained through the credible threat of violence against the right people than by winning a local popularity contest. At the same time, faced with a choice between
the ‘nice’ incumbents who will build your local water well and the ‘nasty’ insurgents who will behead informers, rational civilians should choose to provide information to the latter and withhold it to the former. This is because the benefits of local public goods are diffused throughout the locality whereas the costs of being caught as an informer fall squarely on the individual and his or her family. This moreover assumes that the incumbent can credibly threaten to stop providing the public goods if he does not receive information from the population. On the contrary, incumbents may actually provide more public goods to areas with high insurgent activity, providing the local inhabitants with a perverse incentive never to rat out the insurgents so that they can continue to receive public goods from the incumbent anxious to buy their loyalty.

In short, then, high levels of literacy (in fact, of human capital in general) should correlate with more humane but not necessarily with more effective COIN strategies. This is one application of my theory to COIN which could form the basis of future research.

A second project employs my labor market and relative opportunities mechanisms to explain one paradoxical finding of the COIN literature. Lyall and Wilson found that Western incumbents have become progressively less capable of fighting insurgencies over time and that victory in insurgent wars correlates negatively with an Army’s level of mechanization (Lyall and Wilson 2010). They suggest that this is because Western armies have lost the contact with the local population which pre-industrial militaries had through foraging, and hence the information which it provided. By contrast, I suggest that relative opportunities in core developed and peripheral economies may supply part of the answer. Modern soldiers and intelligence officers
spend relatively little time in the countries in which they may fight insurgencies. By contrast, Western powers of the pre-World War Two era often had colonial armies whose troops and officers were expected to spend the majority of their working lives in the colonies. This meant that they acquired a deep familiarity with local languages and information networks. Often their children were born and raised there, which meant that the colonial power had access to loyal individuals with very good local knowledge. The modern US intelligence community, for instance, would have great difficulty getting more than a handful of individuals to make this sacrifice, however, partly because of the lifestyle which can be enjoyed in the United States. In 19th century Britain or France, however, service in the colonial Army or administration actually offered a standard of life far in advance of what they might have been able to expect at home (Keegan 1991). One reason why developed countries have increasingly struggled to win insurgencies may therefore be that the gap between their standard of life and that in the global periphery is widening to the extent that they can no longer recruit individuals willing to stay overseas long enough to tap into local information networks. This yields many new testable implications.

Returning to conventional war, a further two projects would look more closely at issues of troop motivation.

My project suggests that there is a role, albeit circumscribed, for harsh punishment in motivating troops to fight. Harsh punishments, especially the death penalty, can help militaries in situations of easy monitorability such as holding fixed defensive positions.

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9 Is the One Year Combat Deployment Right for the Army? http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA467294
10 British units of the Indian Army in the days of the Raj were deployed to serve in India for fourteen years before being relieved. Statesman’s Yearbook 1913, p136.
This of course leads to the question of what causes states to adopt or not adopt harsh punishments to begin with. Reiter and Stam simply assume that autocracies will punish more severely than autocracies, but in fact there is currently no hard data to determine this (Reiter 1997). The counter examples of autocratic World War One Germany which executed very few of its troops versus democratic Britain and France which executed many suggest a note of caution about this apparent relationship. The first step in resolving this issue would be to find a reasonable proxy variable for ‘harsh punishment’. The number of executions carried out in a given military is one candidate, but data on this variable is likely to be very difficult to come by. Moreover, the number of executions is also likely to rise and fall dramatically in the event of war or peace. A given military may be highly prone to executing its own soldiers but if it is not engaged in a war then it will have far less occasion to do so. Another potential operationalization is the number of offenses for which a soldier may be subject to execution, or alternatively a composite measure of ‘harshness’ taking into account the extent of both capital and corporal punishment. Unfortunately, however, there exists no easy one stop shop source on comparative military law, which would make such fine grained measures very difficult to construct. In my view, the least unsatisfactory measure of the concept of ‘harshness’ is the existence of the death penalty for desertion. This is the most obvious way in which Armies use harsh punishment to motivate troops and constitutes the majority of military executions in all of the countries I have studied. The problem is that some states such as the United States maintain the death penalty for desertion de jure while not having used it in practice for decades. Similarly, other states both maintained and used the death penalty in wartime but executed only a small proportion of their troops. For instance, the Kaiser’s Germany executed only 45 soldiers in wartime whereas Hitler killed a comparatively huge 16,000 of his own troops (Vogel, Simon and Podlech 1981). These
concerns are impossible to address entirely, but using Amnesty International’s concept of ‘de facto’ abolitionist may help. If, for instance, a state still has the death penalty for desertion de jure but has not used it in the last war it fought, then it might be classed as de facto abolitionist.

On the other hand, the advantage of such a simple, binary variable is that data is available on it. The anti-war NGO War Resisters International provides information on the penalties for desertion in each country of the world, including the date of abolition, if it has indeed been abolished\textsuperscript{11}. Consequently, two statistical models could be run – a logit or probit model on whether a given state still has the death penalty today or an event history model on time until abolition.

Finally, many projects remain to be done on the micro-level determinants of unit cohesion and effectiveness. Costa’s work on the US civil war remains the definitive work so far, but many other dependent and independent variables ought to be explored, and the analysis extended to cover other armies at other times and places. For one thing, as this dissertation has pointed out, desertion is just one of the many forms of shirking behavior in which troops can engage – self-inflicted wounds, reporting to psychiatric casualty stations (where this option exists), group disobedience and simple operational failure are all plausible alternative measures.

For the British Army of World War One, for instance, the achievement of operational objectives as recorded in unit diaries is an important measure of unit success. For the independent variables on the right hand side of the equation, unit cohesion, training and leadership could all be operationalized in various ways. Cohesion could be measured by the occupational diversity of individual units, religious diversity, measures of distance between the home addresses of the

\textsuperscript{11} http://www.wri-irg.org/programmes/world_survey/country_report/en/Syria
individual soldiers comprising the unit or average time that the soldiers in the unit had spent together before going into action. Leadership could be operationalized by the unit commanding officer’s level of military experience and education. Given that World War One British Army service records have been released to the public, and that the 1913 census is now available, data on these variables should be available even if gathering them would be extremely time consuming. Statistically, hierarchical models could be run, examining covariates at the platoon, battalion or even divisional level.

A similar study could be carried out of Allied forces in World War Two. The advantage of this is that hospitalization rates are available for this time period and more importantly, psychiatric injuries such as battle stress were by this time recognized, treated and recorded, offering an alternative measure of ‘shirking’ to desertion. Moreover, the US Army of World War Two offers greater variation in terms of ethnicity and religion than Britain in World War One. The downside is that service records for World War Two have still to be released, so this project would have to wait for many years.

In short, this dissertation has contributed greatly to our understanding of the determinants of destructivity, but it also points the way towards many intriguing new areas for enquiry.

8.3 Policy Implications- or the 64,000 Yuan Question

Estimating the pound for pound fighting effectiveness of the People’s Liberation Army is complicated by the fact that China has not fought a conventional war since 1979. This might not necessarily be a handicap for analysts but for the huge transformation the Chinese economy has undergone since then. This makes any kind of extrapolation from China’s performance against
Vietnam in the late 1970s highly problematic. Here a sound theoretical framework is essential to any decent forecast.

Other theoretical frameworks would suggest that Chinese destructivity would be very low. Clearly this would be the prediction of the democratic triumphalists. Similarly, Michael Beckley claims that China would scarcely perform better than Iraq in 1990 (Beckley 2012). Based on his findings, this would make sense – Chinese GDP per capita still lags behind that of the United States by many orders of magnitude, even at purchasing power parity. The difference between the two countries with respect to this variable is indeed roughly comparable to that between the US and Iraq in 1990.

My viewpoint is quite different, for the gap between China and the United States in terms of literacy is much smaller than the gap in terms of GDP per capita. China currently enjoys a literacy rate of 94% according to the latest World Bank figures. With the United States at 100%, there is still a gap in America’s favor, but it is far smaller than the difference between the two countries in terms of overall wealth. Based only on this information, any expectation that a conventional clash between the United States and the People’s Republic of China would result in a Desert Storm style cakewalk is overoptimistic. A simulation of 100,000 engagements between the United States and a Chinese attacker, using the coefficients estimated in the model above combining my variables with Beckley’s yields a mean loss exchange ratio of only 1.289 Chinese losses per American as against the crushing margins of 300 or more to 1 of Operation Desert Storm. The overall results of the simulation are displayed below:

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Similarly, the same number of simulations involving a US attack on Chinese forces yields a mean loss exchange ratio of .71 Americans per Chinese loss – again only a marginal advantage. Histograms of these simulations are likewise produced below.

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Moreover, a surprisingly large amount of information is known in the West about the PLA’s recruitment, promotion and military education policies. This information also suggests that the PLA would be a substantially tougher foe than many of the United States’ most recent adversaries. Asked to place the PLA’s potential destructivity on a scale with Iraq being at the lowest end and Germany at the highest, specialist on the Chinese military Roger Cliff placed China close to the middle but fractionally closer to Germany. If Iraq were zero and Germany 1 on some normalized measure of destructivity, China would be around .6\(^{13}\). My projected loss exchange ratio between China and the United States compares with an average .00365 between

\(^{13}\) Interview with Roger Cliff by the author
the United States and Iraq and 3.26 between the United States and Germany. My model is therefore a little less generous to China than Cliff is. An average loss exchange ratio with the United States of .78 for instance would put China closer to Iraq than Germany (specifically at .21 on a 0-1 scale).

Looking in greater depth at the People’s Liberation Army, let us start at the lowest levels of the military hierarchy. Here, literacy is a requirement even for service as an enlisted man, something which was not true of Iraq\textsuperscript{14}. Enlisted men are recruited through a system of conscription, with promising conscripts persuaded to re-engage as Non-Commissioned Officers when their term of service expires, just like the Kapitulanten of Imperial Germany. This option is very attractive to a number of Chinese men, especially from the rural hinterlands where wages are still very low, even for those who can read and write. The Chinese Government’s solution to the post service employment problem is similar to that of most Western militaries. NCOs are given vocational training resulting in the acquisition of at least one of the 67 vocational certificates recognized by the Chinese Ministry of Labor (Kamphausen, Scobell and Tanner 2008). Economic studies in the early 2000s at least pointed to the value of these certificates in the Chinese labor market – they yield a rate of return of 3% as against 1.5% for secondary education alone (Xie and Wu 2001).

This combination of high levels of basic literacy with attractive post service employment preparation means that the PLA benefits from a steady supply of literate NCO candidates on whom a strong system of NCO training can be based. In fact, Cliff believes that entrants to the PLA’s NCO corps are even better educated than their American counterparts. For instance, over

\textsuperscript{14} Instruction Manual for the Nebuchadnezzar Division of the Republican Guard, CRRC-SH-RPGD-D-000-481, p14
20% of incoming PLA NCOs possess a three year technical college degree, a qualification Cliff places somewhere between an American Junior College degree and a full BA in terms of academic rigor. As a point of comparison, only 6% of incoming US NCOs possess a 4 year college degree. With this foundation, the PLA, unlike Iraq under Saddam, has a sophisticated and universal system of NCO training. All PLA NCOs must go through this system, including competitive exams, held at specialist NCO training schools or, in some cases, junior officer training establishments. The quality content of this training is hard to verify. Cliff cites complaints by Chinese military sources that it is too heavily weighted towards theoretical as opposed to practical training, a shortcoming he says is on course to being rectified. Nonetheless, similar complaints could be made about many developed world NCO training systems – they certainly do not suggest a lack of rigor. Consequently, it seems likely that the Chinese NCO corps would be capable of implementing modern system principles should their higher leadership decide to decentralize power to them.

On this score, China still has a long way to go. While the official Chinese military doctrine – termed ‘informationized local wars’ – implicitly calls for decentralized decision making, actual practice in the PLA still lags behind. The PLA still tends to centralize power and has a somewhat cumbersome command structure, with important decisions made by a committee of officers rather than one commander. This appears incongruous given the potential competence of their NCO corps, but it must be remembered that decentralizing power within an Army is not necessarily an easy or quick process. Even the early twentieth century German

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15 Interview with Roger Cliff by the author
16 Interview with Roger Cliff by the author
17 Interview with Roger Cliff by the author
18 Interview with Roger Cliff by the author
Army’s progress towards implementing ‘Auftragstaktik’ did not go smoothly. For instance, as Chief of Staff, Field Marshall von Schlieffen temporarily reversed the trend towards decentralization in the Kaiser’s Army in the early 1900s (Samuels 1995). Only once he was relieved by von Moltke did the Germans resume the devolution of power down to the Junior Officers and NCO corps. These random personal factors aside, however, the high quality of the German NCO corps at least gave the Germans the option of instituting decentralized control and in fact, arguably made it inevitable that they eventually would. Conversely, Iraq’s lack of a good NCO corps made it impossible for Saddam’s Senior Generals to decentralize, irrespective of how much they may have realized the benefits of decentralization on an individual level. In the case of China, then, the quality of the NCO corps gives the PLA’s leadership the ability to decentralize should Generals arise within it who are committed to this philosophy of command. I predict, in fact, that in some years such a move by the PLA towards a more decentralized command philosophy like Auftragstaktik is inevitable given its clear advantages and the existence of the necessary skill levels amongst lower level leaders to put it into practice.

In terms of the PLA officer corps, entrance follows a similar pattern to the United States. Recruits mainly enter through the military academy or as ‘National Defense Students’ through civilian universities like the ROTC. As in the United States, officer candidates must hold a university degree. Unlike in the United States, however, they must join the Communist Party and they and their families must pass an investigation for previous anti-government activity (Kamphausen, Scobell and Tanner 2008). By cutting China off from the services of politically ‘unreliable’ individuals, this is one of the weak points of the system.
Once in the officer corps, promotion is based on a mixture of written tests and performance evaluations by peers, superiors and subordinates. Officers who fail to win the respect of their colleagues risk being branded ‘incompetent’, which can lead to demotion or a credible risk of firing. Although the PLA’s military and political departments share responsibility for promoting officers, it appears that military competence is the key criterion (Kamphausen, Scobell and Tanner 2008). Cliff doubts that political loyalty has much effect on the prospects for promotion of individual Chinese officers—outward support for the regime is universal throughout the officer corps, making it hard for individuals to gain advancement on these terms alone (Kamphausen, Scobell and Tanner 2008).

The training system which Chinese officers undergo has been rated as relatively rigorous and high tech. Computer simulations and adapted Western management practices are commonplace (Kamphausen, Scobell and Tanner 2008). Take, for instance, this description of the PLA’s Tank Academy in Bengbu:

“Currently, there are armored troop command, armored firepower application and command automation engineering, information engineering and command, armored technology logistics command and other fields of study. There are also basic cultural courses, set up by the Ministry of Education, for all engineering and science academies at this school. The primary curriculum also offers military strategy, digital model construction and other basic and specialized basic courses. The academy recruits from the entire military and civilian population for four levels of training, referring to Master’s graduate students, university undergraduates, university professional training and middle-grade professional training.” (Kamphausen, Scobell and Tanner 2008)

In terms of coup risk, my analysis would suggest that this is overblown in the case of China for two reasons. First, China has been free of a coup since the foundation of the People’s Republic, establishing mutual expectations of civilian rule. Powell’s research suggests that the risk of a subsequent coup drops to negligible levels after thirty eight years of the last coup. By
this yardstick alone, the risk of a coup in China is very low. Add to this the size of the PLA and one can see that any Chinese General contemplating a ‘march on Beijing’ would face a collective action problem on an equally daunting scale to that which faced German military opponents of Hitler. This is not to say that Chinese civilian leaders do not have concerns about the military – but this revolves more around the willingness of the PLA to crush civilian dissent rather than the possibility of a Latin American style pronunciamento. Even here, these concerns may be misplaced – as Party members, PLA officers share in the benefits of CCP rule and so have strong incentives to maintain the one party system.

It is also important, however, not to overestimate the PLA’s officer corps. The major issue which sources on China cite is military corruption. According to the Australian journalist John Garnaut, senior PLA General Liu Yuan just last December claimed that corruption was the single biggest obstacle to the PLA’s emergence as a top quality fighting force. It is claimed that officers frequently sell military promotions for personal profit (Garnaut 2012).

Clearly, if this practice is as widespread as Garnaut claims, it will seriously weaken the PLA officer corps’ military competence. Corruption is one factor which has received relatively little attention in this dissertation. For one thing, it is very difficult to detect historically and almost impossible to test directly quantitatively. Individuals engaging in corruption have every incentive to hide it, making the compilation of trustworthy statistics very difficult. Even if statistics exist on, say, prosecutions for sale of military offices, it is not clear whether these figures would represent corruption itself or simply the ability of the state authorities to detect it. Recognizing these difficulties, comparative politics databases on cross-national corruption generally use surveys of business opinion on the prevalence of corruption in state institutions.
However, these data sources are only available for the post 2000 era. Reconstructing them for the early twentieth century would be impossible. That said, most econometric studies of the modern era suggest that per capita GDP is strongly and significantly associated with corruption in the civilian economy (Aidt 2011). If one assumes that this also held true for past times and that corruption in civilian life tends to be accompanied by corruption in the military, then two things may follow. First, military corruption may be an additional causal mechanism linking wealth to destructivity. Second, and more importantly, the significance of Beckley’s GDP per capita variable may therefore supply some evidence as to the detrimental effect of corruption on military effectiveness.

Certainly, the theoretical framework of this dissertation suggests that the sale of military commissions should be very detrimental to fighting power. If promotion is determined by anything other than effort to acquire military knowledge, then destructivity will be hampered.

With this caveat, then, my dissertation comes to a more pessimistic conclusion about Chinese military effectiveness than Beckley (from a non-Chinese perspective, that is). China’s high levels of basic literacy and good system of post service vocational training have combined to give the PLA a modern, professional NCO corps, unlike Iraq. This element is crucial.

For the officer corps, the picture is more mixed. The outward appearance of the PLA, at least, gives the impression of a strong, sophisticated and competitive system of officer education and promotion. If, however, this appearance belies a reality of extensive graft and corruption, then Chinese operational and strategic leadership will be far less effective than a formal description of their officer training and promotion system would lead one to expect.
Unfortunately, as discussed above, it will be very difficult, even for China’s own leadership, to ascertain just how widespread the corruption problem really is.

In light of this, the prudent course would be to assume that the People’s Liberation Army would be the most capable conventional foe the United States has faced since the end of World War Two (this is not, admittedly, a very high bar). The competence of the PLA NCO corps alone would surely place the PLA on a par with the Yugoslav Army in Kosovo, or al Qaeda’s conventional 055 Brigade in Afghanistan in terms of modern system adoption. These forces were mostly able to protect themselves against the overwhelming firepower of the US military (Posen 2000) and in the latter case were only dislodged after tough ground assaults and close combat (Biddle 2005). Given China’s huge actual and potential numerical advantage, this is a sobering conclusion. A state with China’s population does not need to match its enemies pound for pound, it only needs to narrow the qualitative gap sufficiently to make its numbers tell. The fate of the Wehrmacht on the Eastern front in World War Two stands witness to this.

8.4 Summary

The funnel has offered a sound theoretical framework with which to understand military effectiveness or destructivity. It has yielded insights about the role of literacy, coup proofing and market structure which have been tested and found true. In closing let me address the question - to what higher purpose do these findings contribute?

The philosopher Bertrand Russell once stated that the glory of a conqueror is merely cleverness in causing men to die (Russell 1961). In light of the horrors of war depicted in this dissertation – of British troops beaten to death by their own men, German soldiers shot for the
crime of stealing a pair of socks to survive the Russian winter, Iraqi Generals executed for military failures beyond their control – it is hard not to sympathize with the pacifist viewpoint that condemns all war as criminal. Seen from this view, studying the sources of destructivity is an almost unseemly business, akin to aiding and abetting a crime against humanity. For many reasons, however, I believe that my findings constitute not only a compelling answer to an interesting question, but a morally worthwhile exercise.

Those who doubt this might consider a visit to the Greek village of Kalavrita. Following the defeat and expulsion of Greek, British and Commonwealth troops from Greece in 1941, resistance was continued in the mountains of Salonika by ill-equipped partisans of the ELAS organization. In one of their major successes, in October 1943 they wiped out an entire company of German soldiers. In retaliation, Major-General Karl von le Suire’s 117th Jaeger Division marched into Kalavrita with orders to ‘level’ the town. Over the next few days, the Germans raised Kalavrita and 25 other surrounding villages to the ground and shot over 690 innocent men, women and children.

The price for the British Army’s low levels of destructivity in the early years of World War Two, and the high destructivity of the German Army, was in a sense paid by the villagers of Kalavrita and countless other places in occupied Europe. Understanding the sources of destructivity is crucial so that states which believe in democracy and the value of human life can protect innocent life from similar atrocities. As Sam Harris points out, a single sociopath, armed with nothing more than a knife, could exterminate a city full of pacifists (Harris 2004).

Nor does understanding the sources of destructivity simply ensure that the right side wins wars. Knowing that literacy and stable civilian rule enhance an army’s pound for pound fighting ability beyond its technological advantages improves deterrence and hence can help to prevent wars. The more destructivity remains something nebulous and unknown, the more some states might be willing to launch wars of aggression even though the balance of material capabilities may seem to counsel against it. They may believe, as Germany in both world wars did, that they may possess some indefinable fighting skill or spirit which might compensate for their material inferiority. Making destructivity explicit and measurable ex ante would remove the potential for such miscalculations. Similarly, understanding a state’s true destructivity levels might help to calm feverish speculation about future threats and forestall pre-emptive wars.

If this work can help to defend some innocent lives from aggression and remove some of the uncertainty which can lead to war, then it will have served an ethical and moral as well as a theoretical purpose.
Appendix A

Disagreements between Superior and Subordinate as a function of battlefield ‘noise’

Appendix: Disagreements between the Senior Officer and Junior Officer k

I performed a number of basic simulations in the computer program R to gauge the circumstances under which differences in the views of the Senior Officer and Junior Officer k with respect to whether \( j_i \) had shirked will lead to disagreements in their estimate over whether Junior Officer \( i \) should be punished.

I started by assuming that the Senior Officer and the Junior Officer have the same mean estimate of the probability that \( j_i \) shirked (.5,.6,.7,.8 and .9). I added a small amount of uncertainty to this estimate (.1) and then allowed the difference in the Senior and Junior Officer’s uncertainty to vary by 5%. I found that even when both Officers have a high estimate of the probability that \( j_i \) shirked, a small 5% difference in their confidence levels can lead to a relatively high number of disagreements. I then relaxed the assumption that they have the same mean estimate and assumed a difference in the estimated probability that \( j_i \) shirked of 5%, 10%, 20% and 50%. Again, even a small difference in the mean estimate generated a high level of disagreement.

<table>
<thead>
<tr>
<th>Common Estimate of the Probability ( j_i ) shirked</th>
<th>Percentage Disagreement in 1000 Simulations with a difference in uncertainty of 5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>.5</td>
<td>49.4%</td>
</tr>
<tr>
<td>.6</td>
<td>47.4%</td>
</tr>
<tr>
<td>.7</td>
<td>39.6%</td>
</tr>
<tr>
<td>.8</td>
<td>33.5%</td>
</tr>
<tr>
<td>.9</td>
<td>16.8%</td>
</tr>
<tr>
<td>Difference in the Estimate of the Probability that $f_T$ shirked</td>
<td>Percentage Disagreement in 1000 Simulations with the same degree of uncertainty.</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>.05</td>
<td>48%</td>
</tr>
<tr>
<td>.1</td>
<td>49.3%</td>
</tr>
<tr>
<td>.2</td>
<td>52.5%</td>
</tr>
<tr>
<td>.5</td>
<td>61%</td>
</tr>
</tbody>
</table>
Appendix B

Sources for the Anglo-German Pay and Pensions Comparison

The pay and pensions of all ranks in the British Army from the late nineteenth century onwards is available through the Army Appropriations Bill, which in turn is available online through the House of Commons Parliamentary Papers. The regulations which governed the award of pensions, that is, how many years would one need to serve in order to gain such and such an amount, are not contained in the Appropriations Bill but rather in the Royal Warrant for the Pay, Promotion and Non-Effective Pay of the Army. This was issued annually. However only the 1906 edition was available online, which is why this year rather than 1901 is used for comparison of pension rates.


Information on the rates of pay for the German Wehrmacht in 1936 comes from the Grundzüge der deutschen Militargeschichte: Band 2 – a collection of documents from German military history. This contained information from a war-time Wehrmacht accounting reference book, the Kassen- und Rechnungslegungsordnung für das Heer published by the state publisher the Reichsdruckerei. The document collection did not make clear whether the pay rates referred
to monthly or annual figures so I was compelled to check the original, which is held in Duke’s Rubenstein rare collections library.

The nominal exchange rate between the Reichsmark and the pound sterling was easy to calculate for the pre-World War One era as both countries were still on the gold standard. The exchange rate was therefore fixed at a rate of 20.43 Reichsmarks to the pound. This information was obtained from Brassey’s Naval and Shipping Annual for the years 1901-1906.

The nominal exchange rate for 1935 is more complicated. The dataset Historical Statistics of the United States provides bilateral annual exchange rate data between the dollar and a variety of European currencies including the pound and the mark between 1913 and 1999 (Historical Statistics of the United States, Bilateral Exchange Rates, Europe 1913-1999, Contributed by Lawrence H Officer). To obtain the pound/RM exchange rate for 1935, therefore, I simply multiplied the RM/$ rate by the $/£ rate. Currency arbitrage should ensure the result is a reasonable approximation of the RM/£ rate.

Comparative figures on GDP in purchasing power parity between a number of OECD countries are available in Angus Maddison’s Monitoring the Global Economy. He reports estimates of GDP in 1990 international Geary-Khamis dollars (a method of calculating purchasing power parity GDP estimates partly involving commodity prices) for Britain and Germany every year going back to 1800. As Maddison calculated that Britain was wealthier than Germany on this measure throughout the time period under study, I calculated purchasing power parity adjusted pay and pensions figures for German officers in pounds sterling in the following way
(German Officer’s Salary in £ at the nominal exchange rate) *(British GDP Per Capita in 1990 Geary-Khamis International $/German GDP Per Capita in 1990 Geary-Khamis International $) =

(German Officer’s Salary in £ adjusted for purchasing power parity)

Thus, for instance, if the ratio of British to German GDP per capita at purchasing power parity is 1.35, then the German Officer’s Salary in £ adjusted for purchasing power parity is his salary in £ at the official exchange rate multiplied by 1.35.
# Appendix C

**Comparative Data in Full**

### German Army Pay 1901

<table>
<thead>
<tr>
<th>Rank</th>
<th>RM</th>
<th>RM/£</th>
<th>£</th>
<th>£ PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kommandierender-Generalm</td>
<td>32520</td>
<td>20.43</td>
<td>1591.77</td>
<td>2148.899</td>
</tr>
<tr>
<td>Divisions</td>
<td>19962</td>
<td>20.43</td>
<td>977.0925</td>
<td>1319.075</td>
</tr>
<tr>
<td>Kommandeur Brigade-Kommandeur</td>
<td>11520</td>
<td>20.43</td>
<td>563.8767</td>
<td>761.2335</td>
</tr>
<tr>
<td>Stabs-Offizier in Regiments-Kommandeur Stellung</td>
<td>10314</td>
<td>20.43</td>
<td>504.8458</td>
<td>681.5419</td>
</tr>
<tr>
<td>Stabs-Offizier ohne Rang</td>
<td>7722</td>
<td>20.43</td>
<td>377.9736</td>
<td>510.2643</td>
</tr>
<tr>
<td>Hauptleute Erster Klasse</td>
<td>3900</td>
<td>20.43</td>
<td>190.8957</td>
<td>257.7093</td>
</tr>
<tr>
<td>Hauptleute Zweiter Klasse</td>
<td>2700</td>
<td>20.43</td>
<td>132.1586</td>
<td>178.4141</td>
</tr>
<tr>
<td>Oberleutnant</td>
<td>1500</td>
<td>20.43</td>
<td>73.42144</td>
<td>99.11894</td>
</tr>
<tr>
<td>Leutnant</td>
<td>1188</td>
<td>20.43</td>
<td>58.14978</td>
<td>78.5022</td>
</tr>
</tbody>
</table>

### German Army Pensions 1906

<table>
<thead>
<tr>
<th>Rank</th>
<th>Income</th>
<th>Years of Service*</th>
<th>Proportion of Final Salary</th>
<th>£</th>
<th>£ PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leutnant</td>
<td>1188</td>
<td>15</td>
<td>0.316667</td>
<td>18.4141</td>
<td>26.29157</td>
</tr>
<tr>
<td>Oberleutnant</td>
<td>1500</td>
<td>16</td>
<td>0.333333</td>
<td>24.47381</td>
<td>34.94361</td>
</tr>
<tr>
<td>Hauptleute 2nd Class</td>
<td>2700</td>
<td>26</td>
<td>0.5</td>
<td>66.0793</td>
<td>94.34775</td>
</tr>
<tr>
<td>Hauptleute 1st Class</td>
<td>3900</td>
<td>31</td>
<td>0.583333</td>
<td>111.3558</td>
<td>158.9934</td>
</tr>
<tr>
<td>Brigade-Kommandeur</td>
<td>11520</td>
<td>36</td>
<td>0.666667</td>
<td>375.9178</td>
<td>536.7339</td>
</tr>
<tr>
<td>Divisions-Kommandeur</td>
<td>19962</td>
<td>38</td>
<td>0.7</td>
<td>683.9648</td>
<td>976.5621</td>
</tr>
<tr>
<td>Kommandierender-General</td>
<td>32520</td>
<td>41</td>
<td>0.75</td>
<td>1193.833</td>
<td>1704.549</td>
</tr>
</tbody>
</table>

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Sources: Hein, das kleine Buch vom deutschen Heer, Leipzig 1901, p126-127, Hughes, the King’s Finest, p82 for the average years of service at each rank. German officers were entitled to a pension after ten years of service. Their pension at that point would be 15/60 of the officer’s final salary. This figure would rise by 1/60 for every additional year of service thereafter. (Hein, p276)

**German Army Pay 1935**

<table>
<thead>
<tr>
<th>Rank</th>
<th>RM</th>
<th>£</th>
<th>£ PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>20277.84</td>
<td>1665.996</td>
<td>2214.795</td>
</tr>
<tr>
<td>General Leutnant</td>
<td>16377.96</td>
<td>1345.588</td>
<td>1788.841</td>
</tr>
<tr>
<td>Generalmajor</td>
<td>13757.16</td>
<td>1130.267</td>
<td>1502.59</td>
</tr>
<tr>
<td>Ober</td>
<td>11384.4</td>
<td>935.3249</td>
<td>1243.432</td>
</tr>
<tr>
<td>Oberstleutnant</td>
<td>8977.8</td>
<td>737.6023</td>
<td>980.5772</td>
</tr>
<tr>
<td>Major</td>
<td>7753.08</td>
<td>636.9812</td>
<td>846.8103</td>
</tr>
<tr>
<td>Hauptmann</td>
<td>7375.92</td>
<td>605.9943</td>
<td>805.6159</td>
</tr>
<tr>
<td>Hauptmann at start</td>
<td>5163.12</td>
<td>424.194</td>
<td>563.9285</td>
</tr>
<tr>
<td>Oberleutnant/Leutnant</td>
<td>4603.68</td>
<td>378.2313</td>
<td>502.8251</td>
</tr>
<tr>
<td>Leutnant at start</td>
<td>2740.44</td>
<td>225.1503</td>
<td>299.3175</td>
</tr>
</tbody>
</table>

Source: Kassen- und Rechnungslegungsordnung fur das deutsche Heer, Berlin 1936, p290-297

**Exchange Rates**

1901-1906 – 20.43 RM/£

1935 – 2.484 RM/$

4.9$/£

12.1716 RM/£

Sources: Brassey’s Naval and Shipping Annual 1901-1906, German Naval Estimates, Historical Statistics of the United States, Bilateral Exchange Rates, Europe 1913-1999, Lawrence H Officer, Table e621-636

**GDP Per Capita, 1990 International Geary-Khamis $**

1901 – Britain: $4551

Germany: $3016

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Ratio: 1.51
1906 – Britain: $4736
Germany: $3317
Ratio: 1.43
1935- Britain: $5537
Germany: $4165
Ratio: 1.33
Source: Monitoring the World Economy 1820-1992, Angus Maddison, Table D-1 (a), p194-197
Appendix D

Comparative British Army-Royal Navy Pay and Pensions Sources

The rates of pay for officers and men of the British Army and Royal Navy were published every year in the Army and Navy Estimates for the year by the House of Commons. Rates of pay change only very infrequently as can be seen by the flat nature of the time series, so the years 1928-1934 can be taken as typical of the British military in the inter-war period. The rates are usually found in Appendix No. 1.

The rates of pay are for the annual rates for officers of the fighting rather than support branches of each of the services – the Regimental Officers of the Army and the Executive Officers of the Navy. Army officers above the rank of Lieutenant Colonel were paid according to appointment rather than rank in the 1930s – for instance, a General Officer Commanding, 1st Class would be paid the same whether he was a Field Marshall, Lieutenant-General or Major-General. However, this was not the case in the Navy, where senior officers were paid according to rank. Given that this seriously complicates comparability, I decided to stop the comparison at Lieutenant-Colonel-Captain level.

To try to ensure comparability, I chose the lowest pay rate for each rank in each service - for instance, the pay of an unmarried Lieutenant with the minimum years of service in the Army. Given the complicated nature of British currency at the time – with 246 pence to the pound rather than 100 as now – I thought it would be simplest to give the pay amounts in pence rather than pounds.

Pensions were termed ‘retired pay’ for officers of all three service branches. The terms and conditions for pensions for officers of each of the services differed. Those of the Army are
laid out in the Royal Warrant on Pay of 1926, the Navy in the Navy List. The Navy’s terms were especially complex and revolved around time served, seniority and other requirements. For comparability, I therefore decided to calculate average pension per rank. Each service’s Estimates contained the total amount spent on retirement pay per rank and the total number of individuals who received retired pay, having retired at that rank (for instance, that of the Royal Navy for 1928 is found in Vote 13 – Non-Effective Services, Naval and Marine Officers). I therefore divided the former number by the latter to arrive at the average pension per service rank. For instance, the average pay for a retired Lieutenant Commander of the Royal Navy would be the total amount spent on retired pay for Lieutenant-Commanders divided by the total number of Lieutenant Commanders receiving retired pay.
Bibliography


Annuaire Statistique de la Republique Francaise.


Brassey’s Naval and Shipping Annual 1901-1906.


http://www.cidcm.umd.edu/icb/


Biography

I was born in Glasgow, Scotland on January 26th 1980. After attending my local high school, Shawlands Academy, I won a place at Peterhouse, University of Cambridge where I read Modern and Medieval Languages starting in October of 1998. There I won a Senior Scholarship and the Friends of Peterhouse Prize in Modern Languages (German) and graduated with an upper second class degree in 2002. After a stint in the business world, I studied for an MA in international relations at the University of Chicago, which was awarded with Honors in 2007. I then won a scholarship to Duke to study political science, where I have been awarded the Alona Evans Fellowship in International Relations twice, three Bradley scholarships, one award from the Center for Canadian Studies and have published one monograph – Endgame for the West in Afghanistan? – through the Strategic Studies Institute.