

What makes Effective Leaders? Evidence from Civil War Captains and their Soldiers *

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Abstract

This paper investigates the effect of leadership ability on team cohesion at critical junctures when a team or organization comes under intense pressure. Our empirical setup involves the 19 decisive battles of the American Civil War. We match military units to their officers in a panel spanning the entire 4-year war, and use officer turnover to estimate leader fixed effects out-of-battle. We find that the leaders with the biggest impact on team cohesion were the captains commanding 100-men companies, consistent with a literature on the biological limits of the scope of team cohesion. Having provided a range of data-points that validate the interpretation of the estimated fixed effects, we apply this measure of leadership ability to predict daily desertions in an event-study setup around the Civil War's 19 decisive battles. We find that high-ability leaders were critical in maintaining team cohesion in these battles. The in-battle death of a captain fractured team morale in their unit only when the leader was of high estimated ability. Additional data-points suggest that high-ability leaders "lead by example," and at the height of battle they asked more of themselves as well as the units they led.

Keywords: Leadership, Teams, Group Cohesion, Social Capital

JEL Codes:

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1 Introduction

Several influential papers have shown that leaders matter in a variety of settings. This includes managers of large companies (Bertrand and Schoar, 2003; Benmelech and Frydman, 2015), political leaders (Jones and Olken, 2005; Besley et al., 2011), coaches of sports teams (Berry and Fowler, 2021), leaders of social movements (Dippel and Hebllich, 2021), or local community leaders (Kosfeld and Rustagi, 2015), among others. At the same time, a theoretical literature outlines as to *why* leaders matter and what characteristics successful leadership entails, such as forming social ties (Akerlof and Holden, 2016), leading by example (Hermalin, 1998), bestowing conviction upon those who follow (Bolton et al., 2012), or by providing direction, guidance, and vision (Dewan and Myatt, 2008). In practice, characteristics that define and quantify “leadership” are hard to measure because of the intangible and multi-dimensional nature of leadership.

In this paper, we aim to bridge these two strands of the literature by proposing a novel way of quantifying leadership ability on a specific dimension of leadership which is crucial for achieving success in team settings: the ability to maintain team cohesion and induce followers to work together towards a common goal in the absence of strong mechanisms to enforce participation.¹ In particular, we study Union Army captains during the U.S. Civil War (1861-65) and how efficient captains manage to reduce desertion rates in their companies in battle.²

We begin by establishing our key measure of captain ability. Using newly collected data for the universe of all 2.2 million Union Army soldiers, we first built a company panel for every week of the Civil War that identifies each unit, its composition of soldiers, and their leader. Similar to the teacher value added literature (see Chetty et al., 2014), we then estimate leader quality as the captain fixed effect in a regression of log desertion on unit characteristics in weeks during which no battle or fighting occurs.³ Outside of battle, soldiers deserted for manifold reasons including dissatisfaction with pay, hygienic conditions, food rations, home sickness, or simply because there was an opportunity to leave (Costa and Kahn, 2010), knowing that desertion was rarely ever punished. We provide evidence that the ability to reduce out-of-battle desertions is a reasonable proxy for a leader’s ability to also maintain group cohesion during battles.

Naturally, this captain fixed effect is a black box, which we open empirically in four different ways: we show that (i) leader fixed effects cannot be predicted by captain’s pre-war characteristics measured from linked 1860 census data, and they also cannot be predicted with their soldiers’ pre-war observables;⁴ (ii) leader fixed effects are associated with a higher probability of leaders being mentioned as leader, hero, or brave in their post-war biographies, which we collected for over 3,000 captains; (iii) leader fixed effects are associated with higher post-war earnings for leaders (but not pre-war earnings),

¹This definition of leadership follows Hermalin (2012, p2) who defines it as the “ability to induce others to follow absent the power to compel or to provide formal contractual incentives.”

²A typical infantry company consisted of 100 soldiers. For an organizational chart of the Union Army and its hierarchical structure see Figure A.1.

³Company characteristics include the share of soldiers from the same county of residence and the share of soldiers from the same ethnic or national group (American, Italian, German, Irish, Other) as measure of pre-existing social networks, the share of soldiers from the same county as their captain as measure of pre-existing connections to the leader, the share of soldiers from pro-Lincoln counties, the unit type (infantry, artillery, cavalry), and the log number of soldiers in the unit.

⁴This may suggest that the high-stakes military setting we study allows individuals to discover in themselves latent leadership abilities that were less apparent in civilian settings. This explanation resonates with the historical biography of the war’s most famous leader, Ulysses Grant, who ascended from obscurity to command the entire Union Army and went on to become president of the United States (Brands, 2013).

implying that these fixed effects capture valuable leadership skills and a captain's ability to manage people in a military setting, which is also rewarded in the labor market later on; and lastly, (iv) assessing leadership spells within the same units, high-quality leaders are not systematically selected into low-desertion units, ruling out the possibility of a spurious correlation. The leader fixed effect of the current captain in the same unit is perfectly uncorrelated of his predecessor in the same unit, and it is also uncorrelated with desertion rates under the previous captain.

We then provide evidence that leadership, as measured per our fixed effects approach, does indeed matter for desertions in battle, reaffirming the previous literature on the importance of leaders, where the theoretical and management literature particularly emphasizes the importance of leadership at 'critical junctures' (Horowitz and Kenerly, 2014). We consider the nineteen largest and most decisive battles of the conflict as listed in Selcer (2006).⁵ The first battle in this list is the First Battle of Bull Run on July 21st 1861, which led a massive surge in desertions as the ugly reality of warfare fractured team cohesion throughout the ranks (McPherson, 2003, ch11). The most well-known Civil War battles, including Shiloh, Antietam and Gettysburg are also in Selcer's list. These decisive battles were the 'critical junctures' of the war: they stood out in their ferociousness not only within the Civil War, but also relative to any previous wars, because the Civil War saw the confluence of modern weapons technology and pre-modern military strategy that was still dominated by large-scale frontal assaults with closed-rank line formations (Keegan, 2011, p164-234). As a result, these battles were characterized by extremely high casualty rates, as well as high desertion rates, While most of a Civil War soldier's experience consisted of prolonged periods of inactivity, team cohesion was severely tested in these decisive battles where officers had to prove their leadership by preventing their units from "cracking" "under flying bullets" (Linderman 2008, p44-45, McPherson 1997, p58-60). In fact, Costa and Kahn 2010, p45 argue that this is the reason why seeking out decisive battles has dominated historical warfare strategy (Hanson, 2001; Keegan, 1976). Similar to the management literature, historians of war also emphasize the critical importance that effective leadership had in these high-pressure situations (Grinker and Spiegel 1945, Savage and Gabriel 1976, Kellet 1982, Linderman 2008).

From an empirical point of view, decisive battles provide us with well-defined treatments or shocks to company-level desertions in a daily event study design that covers the seven days before and after each major battle. The largest amount of desertions occur on the day of the battle, as well as during the next two days after the event. Above median quality leaders have 42 percent lower desertion rates relative to below median quality leaders. The effect of leader quality on desertions holds in both the company- and individual-level analysis and it cannot be explained away by a large array of fixed effects, individual soldier, unit, or leader characteristics. We further provide evidence that this effect is causal. Given the short-lived impact of even large-scale battles on desertions and the observation that major battles are, on average, 63 days apart from each other, we use the death of a unit's captain in the previous battle as instrument for the change in leader quality from the previous to the current battle. This analysis suggests that a death-induced turnover leading to a positive change in leader quality causes desertions to be almost 15 percentage points lower in the current battle relative to the counterfactual in which the previous leader had survived.

Finally, we show that leadership by example and sacrifice, as theorized by Hermalin (1998), is indeed a key characteristic through which effective leaders manage to maintain group cohesion in battles. We

⁵Selcer (2006) lists twenty battles, however, the last is a naval engagement, which we do not observe in the data.

digitized 121 battle maps that provide each unit's location on the battlefield and its distance to the nearest enemy unit, which we use in regression analyses to establish three empirical observations: (i) leadership quality, as measured by the captain fixed effect, is unrelated to distance to the nearest enemy unit. This implies that high-quality leaders not merely see lower desertion rates in their units because they are more risk averse and keep greater distances from the enemy. This is true in battles that are won as well as those that are lost; (ii) the captain fixed effect is still negatively associated with desertions, yet it is positively associated with battle deaths in the unit. This implies that captain quality induces greater sacrifice by their soldiers, which holds conditional on proximity to the nearest enemy; (iii) high-quality leaders are also more likely to die in battle, implying that they managed to lower desertion rates despite higher battle casualties by leading from the front and by their own sacrifice. In short, the evidence is supportive of the theoretical leadership literature in which effective leaders can ask more of their team because they also asked more of themselves.

We also rule out other potential channels. We match officers and regular soldiers to the 1860 and 1870 full Count census,⁶ and show that better captains see an increase in their post-war wages, conditional on pre-war individual characteristics, this is not true for soldiers who served under such captains. This limits the possibility that results are driven by network effects or the pre-war economic composition of the areas from which captains and their soldiers came given that enlistment into Union Army units was highly local at the time. Soldiers serving under better leaders also do not see any declines in their probabilities of injury, disability, or promotion, implying that better captains do not bestow any significant military advantages on their soldiers in return for loyalty either. Even though we cannot test or rule out all possible alternative channels, the evidence points toward leadership by example as a key component in the effectiveness of Civil War captains. We also note that the captain fixed effect does not cover all possible aspects of leadership, such as strategic or military thinking, but that instead our results speak to one important dimension of leadership, which is the ability to maintain team cohesion in high-stress, high-stakes situations. We can also not speak to whether leadership is innate and learned or activated in the particular environment of these captains' wartime experience. Nonetheless, our study provides important new insights that combine the empirical fact that leaders matter with the theoretical literature as to why they matter by overcoming a key challenge faced by the literature, which is the measurement of leader quality and its relationship to different channels of leadership.

Despite the unique military setting and associated concerns regarding external validity, there are many similarities to leadership in modern non-military organizations. Just like for Civil War soldiers who need to band together to win a battle, overall output in firms and organizations often depends on a team production function with strategic complementarities of group members, implying that shirking is profitable while managers only have weak means to enforce participation. Of course, a manager can elect to choose the corner solution and fire a worker, however, this is costly and may lead to backlash from the rest of the team. Likewise, Union Army captains did not have strong means to force soldiers to stay or to punish deserters, and hence the incentive to not desert was primarily social (Costa and Kahn, 2003; De Paula, 2009). An important distinction between the military and modern company case is the following, which helps our empirical setting: workers may choose the minimum level of effort that maintains their employment but without contributing substantially to team production, similar to

⁶We use the cross-walk created by [Dippel and Heblich \(2021\)](#) to link Civil War records to the 1860 Census, and the cross-walks created by the Census Linking Project ([Abramitzky et al., 2020](#)) to link records from the 1860 to the 1870 full Count census.

the recent phenomenon of quiet quitting. Our setting allows us to abstract from the effort margin. If a soldier does not desert, then he will participate in battle by default ([Costa and Kahn, 2010](#)).

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