Segregation, Integration, and Death: Evidence from the Korean War*

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Abstract

How does the design of military institutions affect who bears the costs of war? We answer this question by studying the transformative shift from segregated to integrated US military units during the Korean War. Combining new micro-level data on combat fatalities with archival data on the deployment and racial composition of military battalions, we show that Black and white soldiers died at similar rates under segregation. Qualitative and quantitative evidence provides one potential explanation for this counter-intuitive null finding: acute battlefield concerns necessitated deploying military units wherever soldiers were needed, regardless of their race. We next argue that the mid-war racial integration of units, which tied the fates of soldiers more closely together, should not alter the relative fatality rates. The evidence is consistent with this expectation. We finally demonstrate that, while aggregate fatality rates were equal across races, segregation enabled short-term casualty discrepancies. Under segregation there were high casualty periods for white units followed by high casualty periods for Black units. Integration eliminated this variability. The research note highlights how enshrining segregationist policies within militaries creates permissive conditions for either commander's choices, or the dictates and variability of conflict, to shape who bears war's costs.

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Introduction

The 1896 Supreme Court case Plessy v. Ferguson upheld the doctrine of "separate but equal." Through this ruling the nation's highest court legally enshrined the existing reality of segregated institutions throughout the United States, ranging from separate schools for Black and white children to separate military units for Black and white soldiers at war. Segregationist policies were not unique to the US, with historical parallels ranging from the German Nuremberg laws prohibiting marriage between "Aryan" and "non-Aryan" individuals to the policies of apartheid South Africa. Militaries frequently enshrined similar divisions, whether along ethnic or class lines in India,[1] a Druze only battalion in the Israeli Defense Forces,[2] or through ethnic militias operating outside national forces as in post-Saddam Iraq[3] or during the Second Chechen War.[4] In each case, the institutional decision to separate individuals based upon their race or ethnicity created the opportunity for inequality in outcomes. How do differences in the way states design military institutions affect who bears the costs of war?

This research note answers this question, which is central to the choice to initiate war,[5] by studying how segregation in military units affects who dies fighting for their state in war. We focus on racial segregation in the Korean War. Theoretically, this conflict provides a unique opportunity to evaluate not only whether segregation allowed a racial fatality gap between Black and white combat soldiers, but also whether these fatality rates changed following the integration of military units mid-war. This allows us to unpack how different policies regarding unit composition affect who pays the greatest cost states ask of their inhabitants while holding fixed contextual attributes of the conflict. Our theoretical interest in studying the relationship between military institutional design, race, and casualties necessitates studying segregation and integration where it mattered most

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1 Rosen 1996, 211–216.

2 See `haaretz.com/.premium-idf-to-disband-druze-battalion-1.5363658`

3 Sharp 2006.

4 Lyall 2010.

5 Bueno de Mesquita et al. 2005.

in practice: within military units engaged in an active war effort. We construct a micro-level dataset that combines individual-level information on the race and unit assignment of all US Army soldiers killed in Korea with materials we collected from the National Archives on the racial composition of military units. The new data enable analyses at the *battalion-level*, allowing a more granular study of the relationship between military institutions and discrepancies in battlefield experiences than previously possible. We answer three theoretically distinct questions at the intersection of international security and race and ethnic politics.

First, were Black soldiers more likely to die in combat roles when serving in segregated units than their white counterparts? Building on prior research about the historical role of Black soldiers in the military, we highlight how the divergent implications of racism produce opposing empirical predictions. On one hand, if commanders perceive Black lives to be less valuable than white lives they will provide Black soldiers with poorer training and assign them to more risky missions, effectively using them as "cannon-fodder." If true, Black fatality rates will exceed white fatality rates. On the other hand, if commanders perceive Black soldiers to be less competent, then they might relegate Black units to strategically unimportant missions further from the front lines. Such behavior decreases Black units' exposure to fighting; thus Black fatality rates will trail white fatality rates. Using the newly acquired historical data, we find that Black and white soldiers died at essentially identical rates under segregation. The average white battalion lost 0.89% of its soldiers each half-month of fighting. The comparable figure for Black units was a similar 0.84%.

Qualitative evidence provides one potential explanation for the null finding: acute manpower demands during the segregated part of the conflict necessitated sending military units wherever soldiers were needed regardless of their race. Further quantitative analysis, which distinguishes between periods of attack, defense, and stalemate, buttresses this claim. Black and white soldiers died at similar rates during segregation regardless of the fighting phase. Despite the presence of a discriminatory military institutional policy, in an era of widespread racial prejudice, it appears the logistical necessities of war overrode the myriad reasons we might observe differential fatality rates in segregated units. This military context highlights an important constraint that biased polit-

ical and military leaders face: while these actors create policies and institutions that discriminate against groups on a racial or ethnic basis, they also commonly need battlefield contributions from these groups. War intensity and the necessity of extracting contributions from all personnel varies across contexts, which is a point we return to when addressing the external validity of the findings.

Second, did Black soldiers die at different rates than white soldiers when serving in integrated military units? We expect that fighting alongside one another links the fates of Black and white soldiers more closely together and thus we should not observe differences in fatality rates. Employing the same micro-level dataset on the rates of combat fatalities in the Korean War as integration unfolded, we again find similar fatality rates across racial lines. Third, how did the institutional shift toward integration affect the *short-term* variability in casualty rates between Black and white soldiers? Though we find only minuscule aggregate differences in racial fatality rates under segregation and integration, the aggregate patterns mask important heterogeneity. Under segregation there are greater opportunities—whether intentional due to commanders' choices or by chance—for either Black or white units to incur a disproportionately large number of fatalities in any given period. When soldiers are fighting in either all back or all white units, a single high casualty battle or operation disproportionately affects the individuals in the engaged military unit. Under integration, the costs from high-casualty events (e.g., intense battles) are more likely to be evenly distributed. We provide evidence consistent with this argument, showing that some periods under segregation had large absolute discrepancies, sometimes with white soldiers dying at higher rates and other times with Black soldiers dying at higher rates. Following unit integration, we observe no such spikes of disproportionate burden sharing.

The research note makes two main contributions to the field of international relations. The first is studying a distinct outcome variable—the distributional consequences of conflict—as part of a growing body of research considering how inequality and diversity within militaries and international peacekeeping forces affects their performance. Recent work debates whether inequality within militaries decreases battlefield performance[6] or is made moot by the extreme demands com-

[6] Lyall 2020.

bat imposes on its participants.[7] A related area of inquiry shows how the aggregate diversity of national troop contributions boosts the efficacy of peacekeeping operations,[8] but notes that the effects of local integration of national forces remains open to further study.[9] We extend this prior work on military inequality and integration to areas beyond battlefield performance, analyzing the potential and real ramifications for who ultimately bears the costs of war. Importantly, this highlights that while unequal militaries might perform worse than more equal ones, this does not necessarily mean that the costs of war are unequally distributed.

Second, we contribute to research on how who bears the costs of conflict shapes whether states go to war.[10] The distribution of the costs of conflict and regime type shapes whether a leader makes (im)prudent choices in waging war.[11] Broadly borne costs theoretically induce caution among democratic leaders who must appeal to the broad populace to remain in power. However, precisely who bears the costs may moderate the relationship between regime type and leader prudence. We highlight how military staffing policies can also shape war's cost distribution. If groups with low political efficacy—such as African Americans in the 1950s—shoulder undue costs, democratic leaders may confront fewer constraints in their decision to initiate conflict. We document how military necessities can provide at least one check on the ability of democratic governments to disproportionately target members of underrepresented groups. Identifying the determinants of who suffers the ravages of war is an important part of understanding when states are more likely to wage it.[12]

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[7] Barkawi 2017.

[8] Bove and Ruggeri 2016.

[9] Cil et al. 2020.

[10] Bueno de Mesquita et al. 2005; Caverley 2014.

[11] Bueno de Mesquita et al. 2005; Weeks 2014.

[12] Caverley 2014.

US Military Segregation and Integration

On July 26, 1948, President Truman issued Executive Order 9981, which was widely understood to call for integration in the US military. Truman issued the order in an environment with a growing civil rights movement pushing for racial equality in the armed forces on one side, and military resistance to racial integration on the other. Despite the military's resistance, domestic and international considerations compelled Truman's action.[13] Domestically, the increasingly organized Black vote represented a sizable voting bloc that Democratic candidates sought to win. Before the 1948 election, Truman's advisers urged him to take concrete actions to court the Black vote. Internationally, the emerging threat of the Soviet Union highlighted the importance of maintaining and strengthening the US military which was shrinking in the aftermath of World War II. Black individuals represented a sizable amount of US military manpower.

Despite Truman's executive order, implementation was slow as units were *still* segregated when the Korean War began on June 25, 1950. They remained segregated during the North Korean push south toward Pusan, the landing in Incheon and counteroffensive north of the 38th parallel, as well as the Chinese entry into the war and gradual stabilization of the front. Commanders finally took on the task of integration during an active war in the summer and fall of 1951. Our analysis and robustness checks that compare the segregated and integrated periods of the war take into account how the timing of integration intersects with a general decline in the war's intensity and overall fatality rates.

Competing Logics of Racism and Casualties Under Segregation

Drawing on historical evidence, we describe countervailing reasons to expect that unit segregation increased or decreased the relative fatality rate of Black soldiers. We highlight two factors sug-

[13] MacGregor 1981, 292.

gesting that Black soldiers should die at *higher* rates, before turning to offsetting considerations.[14] First, perceptions that Black lives are worth less than whites lives would lead commanders to assign Black soldiers to difficult and dangerous tasks within war. Several events illustrate the prevalence of such beliefs in US military history.[15] One account of the Union's attack on Fort Wagner in the American Civil War contends that the commanding officer let the all-Black Massachusetts 54th Regiment lead the charge precisely because the fatalities would be high. The account describes Major General Truman Seymour stating, "Well, I guess we will let Strong lead and put those d—d niggers [sic] from Massachusetts in the advance; we may as well get rid of them one time as another."[16] Many decades later, a battalion commander echoes these sentiments during an interview for Project Clear, a major military opinion survey on attitudes to desegregation before the Korean War.

> If we are going to have all-colored units, I would suggest they be assault troops and not defense troops. In defense they have to sit still day or night and the darkness finally gets them. They get to thinking too much and imagining too much and they're apt to get panicky so my idea is to use them as assault troops.[17]

Second, Black soldiers recounting their experiences serving in segregated units allege unequal treatment on and off the battlefield.[18] Summarized interviews of Black soldiers for Project Clear note that "The all-Negro unit is alleged to receive discriminatory treatment in equipment, supplies, recreational opportunities, promotions, tough unit assignments, rest rotation, food, clothing,

[14] We study divergent fatality rates conditional on serving in a combat role in a war zone. This is different from whether a demographic group's share of overall fatalities mirrors its share of the population (as studied in Kriner and Shen 2010; Moskos and Butler 1996, 8; and Maxwell 2018, 111). Black soldiers constituted 9.2% of all US Korean War fatalities while making up 10.0% of the US population according to 1950 census data.

[15] For research on the relationship between Black military service, integration, and civil rights strategies, see Knauer 2014.

[16] Berlin, Reidy and Rowland 1998, 101.

[17] Bogart 1992, 11-12.

[18] Lerner 2018, 535–536; Phillips 2012, 133–134.

PX rations, medical care, leadership, and publicity."[19] It continues: "Calls by all-Negro units for airstrikes were ignored; they get more 'short rounds' from our artillery; their wounded must be carried off hills by other men, since they are not given helicopter evacuations."[20,21] Some allege that poorly performing white officers were assigned to command Black units, thus putting Black soldiers at greater risk.[22] More difficult assignments coupled with worse battlefield support suggests Black soldiers in segregated units would die at higher rates than white counterparts.

In contrast to the reasoning above, several factors lead to the opposite empirical prediction: Black combat soldiers should die at *lower* rates than white soldiers. Proponents of segregation justified the policy's continuation on the grounds that Black soldiers were less competent soldiers than their white counterparts.[23] They also noted that Black enlistees generally performed poorly on the standardized military aptitude tests. Governments that have greater trust in a privileged group—white soldiers in the US case—can assign them a disproportionately high share of the combat burden.[24] If deemed less competent, Black units could be assigned trivial tasks away from the front lines.

These attitudes were present in the enlisted and officer ranks of the military at the onset of the Korean War. One divisional deputy commander explains his preference for keeping Black soldiers away from combat, "In my opinion, they serve better, they perform better, in service type units where they're not in physical contact with the enemy... They've been very successful as artillerymen, and I believe in antiaircraft. If I were just looking for efficiency, I would just put them in those types of units."[25] A white enlisted service-member echoed these sentiments: "I think they

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[19] Bogart 1992.

[20] Bogart 1992, 53.

[21] Prior work documents the importance of medical practices in combat zones for explaining fatality to wounded ratios (Fazal, 2014).

[22] Maxwell 2018, 72.

[23] Lerner 2018, 537.

[24] Levy 2012.

[25] Bogart 1992, 33.

all ought to be in Truck Companies . . . They're no good in combat. We had to retreat through their position many a time because they bugged out." [26]

The described attitudes suggest a preference for keeping Black units away from strategically vital tasks. Assigned easier and less important missions, Black fatalities would trail white fatalities. In the context of the Korean War, this could mean assignments away from likely North Korean attack points along the Pusan Perimeter where any weaknesses in the US response could allow North Korean forces to drive US forces off the peninsula. Such zones, for instance along the Naktong Bulge, were likely to see high fatality numbers. If commanders disproportionately assigned white units such tasks, they would die in higher numbers than Black counterparts.

We stress that outcomes from segregation could look quite different in a military context compared to other contexts, such as schooling. In most contexts, the distributional consequences of discriminatory policies are clear: privileged groups benefit while targeted groups suffer. In many instances, anticipation of asymmetric outcomes motivates the implementation of discriminatory policies in the first place. However, the implications of institutional discrimination in the military, at least in the form of personnel segregation, are more ambiguous in terms of its battlefield consequences. Those imposing segregation in the military want something from the underprivileged group—battlefield contributions supporting the US war effort. Demands for contributions from all personnel could override other considerations and lead to no racial fatality gap under unit segregation.

Micro-Level Data on the Racial Distribution of Combat Fatalities Under Segregation

To adjudicate between the theorized possibilities we use new micro-level data on the race, date of death, and military unit assignment of all US soldiers who died during the Korean War. The data set includes an observation for each army infantry battalion deployed in Korea for each half month

[26] Bogart 1992, 33.

period of the segregated portion of the war. An observation captures the battalion's specified race and fatalities for that period. This section sets the temporal scope for the segregated period of the war, justifies the unit of analysis, and describes the multiple data sources.

The Infantry Battalion-Period as the Unit of Analysis

The segregated-era analysis covers the start of the war until November 1, 1951. By this date, nearly 75% of units were integrated and the all Black 24th Regiment was disbanded.[27,28] The unit of analysis during segregation is the infantry battalion-period, which we adopt for three reasons. First, infantry units provide a natural analytical focus given that they bore the lion's share of the war's costs. Second, we use the battalion because this was the lowest organizational level at which segregation occurred in infantry units. Infantry battalions were nested within regiments which were nested within divisions. Third, the "period" portion of the infantry battalion-period spans half-month increments—i.e., there are separate observations for the first and second halves of September 1950. The temporal granularity mirrors the Army personnel reporting standards during the war. In particular, each half-month infantry units provided detailed manpower reports to G-1 staffs, which manage personnel issues and planning for the Army. Additionally, half-month increments allow us to account for time-varying factors that affect fatality rates. These include whether a given battalion was deployed in Korea, as opposed to stationed in the US or Japan, and the intensity of fighting which fluctuated wildly throughout the war.

Constructing the Data

Generating infantry battalion-period measures requires individual and unit data. We collect the individual-level data from two sources. First, the National Archives maintains digitized files on all

[27] MacGregor 1981, ch. 17.

[28] Tests in the Supporting Information (SI) show that results remain stable when using different cut points.

US military fatalities during the war.[29] These records detail each casualty's name, date of death or declared dead, race, and service number. The database includes 33,642 records for all those who died as a result of hostilities. The Korean War Project is the second individual-level data source. It is a privately maintained site that contains individual records with a soldier's name, service number, and date of loss.[30] The vast majority of pages include the soldier's unit assignment, typically down to the company, which is even more granular than the battalion. We scraped the pages for all 36,896 individuals. The number exceeds that from the National Archives due to the inclusion of fatalities from non-battle causes—e.g., accidents and illness. We merged the National Archives and Korean War Project data using service numbers which uniquely identify each individual.[31] In total, the data set has 19,840 combat fatalities with known infantry battalion assignments, of which 15,188 occurred during the segregated period of the war.[32]

We aggregate all individual fatalities to the battalion-period level. At the unit level, for each battalion that fought during the segregated portion of the war, we collect its date of arrival (and departure if relevant) on the peninsula from an exhaustive chronology of the Korean War.[33] In total, 64 different infantry battalions fought during the segregated part of the war. Of these 64, five were

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[29] "Korean Conflict Casualty File, 1/1/1950–2/7/1957." *Records of Military Personnel Who Died as a Result of Hostilities During the Korean War.* Record Group 330. National Archives.

[30] Accessed 1/30/15: `koreanwar.org`. The National Archives includes the Korean War Project as a "Military Resource" `https://www.archives.gov/research/alic/reference/military/korean-war.html`.

[31] Checks of the merged data revealed consistency in names across the two datasets. Failure to match was primarily due to the Korean War Project including non-combat fatalities which we exclude from the analysis.

[32] The sample declines from the total hostile-combat deaths in the war of 33,624 to the 19,840 for two reasons. First, service branches besides the Army, and thus outside the scope of analysis, experienced approximately 6,000 fatalities. Second, within the Army, roughly 8,000 fatalities do not have infantry battalion assignments because they served in non-infantry units (e.g., field artillery), in a regimental or division headquarters without a specified battalion, or the Korean War Project lists no or multiple battalion assignments.

[33] Hannings 2007.

Black battalions: all three battalions of the 24th Infantry Regiment of the 25th Infantry Division (ID), the 3rd Battalion of the 9th Infantry Regiment, 2nd ID, and the 3rd Battalion of the 15th Infantry Regiment, 3rd ID. The final step calculates the fatality rate for each battalion-period, which we multiply by 100 to ease interpretation. For the denominator, we use the benchmark strength levels set forth in the Tables of Organization and Equipment (T/O&E),[34] which stipulate that a battalion consists of 917 soldiers. Admittedly, there was variation in overall size—for instance, a battalion might be smaller after recent heavy battlefield losses. Additionally, some evidence suggests that Black battalions were larger because of a dearth of units to which Black soldiers could be assigned. While noting potential discrepancies, the SI shows that variation in unit size is highly unlikely to alter the findings. Substantive results remain similar even if battalions of one race averaged 100 more soldiers than battalions of the opposite race. The numerator for the fatality rate equals the number of fatalities within that battalion-period whose race matches the putative race of the battalion. Occasionally, some units contained soldiers of different races before the designated cut point between segregation and integration—such as white officers in Black units. We exclude those fatalities whose race did not align with the designated race of the battalion though the SI shows results are similar when including those fatalities.

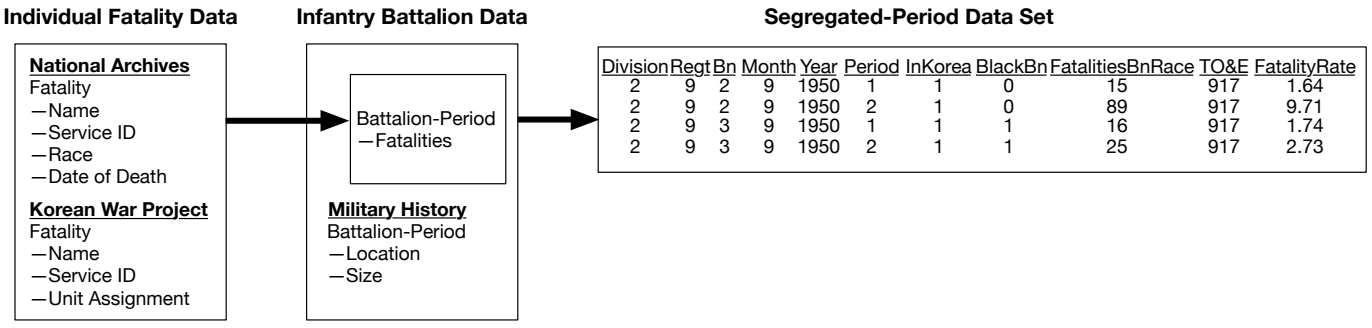

Figure 1 – We merge two sources of individual-level information to create a unique observation for each battalion for every half-month period.

Figure 1 summarizes the data construction process. Merging two sources of individual-level data allows us to aggregate fatalities by race and date to the battalion-period. Reference guides for

[34] Boose 2005.

the military history of the Korean War provide arrival (and exit) dates for each battalion. Put together, we obtain an observation for each infantry-battalion period when battalions were in Korea.

Results for Casualty Rates Under Segregation

The first analysis addresses whether Black infantry battalions deployed in Korea experienced higher fatalities than white units. Figure 2 plots the fatality rates for each battalion in Korea through the segregated portion of the war. Solid lines represent mean battalion fatalities for a given period, split by battalion race. Several takeaways emerge from the figure. First, in accordance with known combat patterns, the war's intensity fluctuated over time. US fatalities spiked during the initial months as North Korean forces pushed opposition forces south and again in the final months of 1950 with China's full entry into the war. During these and other periods, costs were distributed unequally across battalions with some losing over 30% of their soldiers while others saw no losses.[35]

Most saliently, the figure does not provide clear evidence of a racial fatality gap. Black and white battalion fatality averages largely track one another. However, sharp disjunctures punctuate the otherwise parallel pattern. Among these disjunctures, white units sometimes bore the heavier costs and other times Black units did. There is no immediate evidence supporting a racial fatality gap in either direction. That said, the presence of disjunctures between fatality averages is noteworthy and a point to which we return.

Regression analyses in Table 1 corroborate overall impressions from the descriptive snapshot. All models use OLS with the battalion-period as the unit of analysis.[36] Model 2 includes period fixed effects to capture any unmeasured time-specific factors that affect casualty rates, such as combat intensity. Consistent with Figure 2, the difference in fatality rates between Black and

[35] SI tests show that skew in the distribution of battalion-period fatalities is unlikely to account for the null findings.

[36] Results are robust to clustering standard errors on the battalion. Clustering shrinks our standard errors; we report the more conservative standard errors in Table 1.

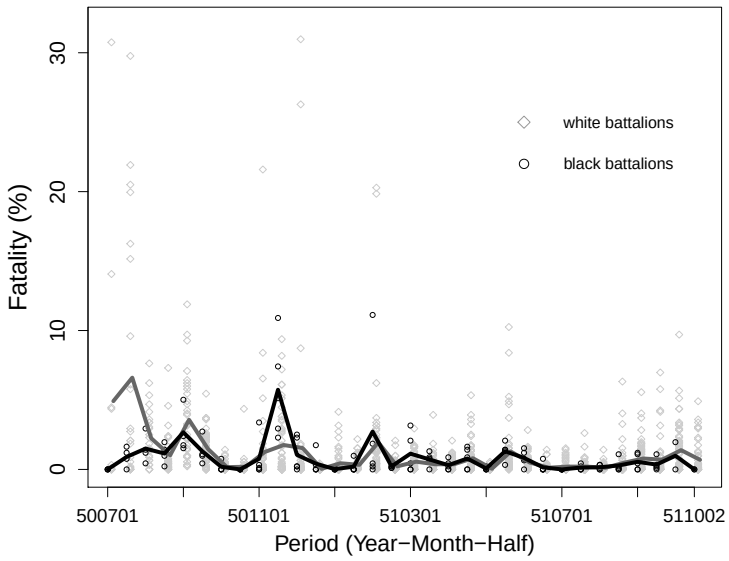

Figure 2 – US combat fatality rates by battalion through the segregated portion of the Korean War. Each point represents one battalion-period. Solid lines represent the average battalion fatality rate for that period, split by race.

Table 1 – Fatality Rate by Race: Segregation

	Battalions in Korea	
	(1)	(2)
Black Battalion	−0.05	−0.17
	(0.21)	(0.19)
Constant	0.89***	0.82***
	(0.06)	(0.29)
N	1,670	1,670
Period FEs	N	Y

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Period fixed effects not shown. Outcome is probability of fatality multiplied by 100.

white battalions is not statistically or substantively significant. In Model 1, for the average half-month period white units suffered fatality rates of 0.89%, which amounts to just over 8 deaths. By comparison, the fatality rate for Black units was only 0.05% lower, $\pm$ 0.41% at the 95% confidence level, which is equivalent to a range between 4.2 fewer deaths and 3.3 more deaths per period. The

evidence does not support the conclusion that one race died at higher rates than the other. Including period fixed effects yields generally similar results. Though it shows a slightly larger gap in fatality rates, we again cannot preclude the null hypothesis of zero difference. While theorizing various reasons to expect divergent fatality rates, we intriguingly find no gaps.

Discussion of the Null: Highlighting Potential Mechanisms

Black and white battalions suffered similar fatality rates in Korea. This finding is consistent with two plausible explanations: either (1) none of the theorized mechanisms linking race to combat casualties is operative (i.e., commanders are deploying Black battalions in a race-blind fashion), or (2) *offsetting* mechanisms are operative, with the dual race-based aspects canceling out. The latter would be most likely if Black units were primarily used on attack, while white units where charged with defensive missions. Qualitative and quantitative evidence is consistent with the first explanation: dire battlefield circumstances overrode the theorized mechanisms linking race to casualties.

The US military confronted bleak conditions at the war's outset, finding itself overstretched throughout the war's segregated portion. These factors generated intense manpower demands that limited commander discretion in determining unit assignments and positioning. The US Eighth Army arrived in Korea understrength, undertrained, and under-equipped after years of Japanese occupation dampened its combat readiness. One member of the 27th Regiment recalls being "attacked and overrun on an almost daily basis."[37] Realities on the ground limited commanders' options. For example, from the outset Major General Ned Almond began designing an offensive counter-attack behind enemy lines. He targeted a July 16 launch date, only weeks after US forces arrived. Almond's plan "was very quickly discarded, the troops too desperately needed for a much more immediate task—keeping the North Koreans from running American forces off the peninsula."[38] Limitations on where units could be allocated persisted. When initiating the incursion into North Korea, many units were forced to hold back because of an inability to provide logistical

[37] Maxwell 2018, 99.

[38] Halberstam 2009, ch. 10.

support north of the 38th parallel.[39] As late as January 1951, once again in retreat, US forces remained understrength and desperate for more personnel. Speaking of potential unit integration, though more broadly applicable, a private shared, "[w]e need every man we can get in the present crisis, and it's not time to fool around with where he will serve."[40] The extreme dictates of war necessitated the use of whatever forces could be mustered, largely overriding potential discriminatory intentions. Section 1.7 in the SI further qualitatively assesses whether Black and white units were deployed differently during the segregated part of the war by diving deeper into the periods when short-term fatality gaps emerged.

To refine our understanding of the mechanism(s) behind the null results, we quantitatively evaluate whether racial fatality gaps emerged under different fighting conditions. We code each period of the segregated portion of the war as being one of *defense*, *offense*, or *stalemate* from the US perspective. Coding details are provided in the SI and follow well-known phases of the Korean War. No statistically significant difference in racial fatality rates emerges in any of the three modes of combat. Substantively, Black units suffered slightly lower fatality rates than white units on defense ($-0.09\%, \pm 0.84\%$ at the 95% confidence interval, $n = 662$) and slightly higher fatality rates on offense ($0.08\%, \pm 0.55\%$ at the 95% confidence interval, $n = 546$). Whether on defense or offense, Black and white battalions bore proportionally similar costs. Higher aggregate fatalities and higher single period racial fatality gaps emerged when on defense, but these periods offset one another as the qualitative discussion above notes. In sum, we do not observe a racial fatality gap under unit segregation. Extreme manpower requirements coupled with stochastic elements of war—such as which unit happens to absorb an enemy's surprise offensive—better explain casualty patterns the Korean War's segregated portion.

[39] Bowers, Hammond and MacGarrigle 1997, 189.

[40] Maxwell 2018, 110.

Integration: Expectations, Data, and Results

After extensive delays, the Army began implementing Executive Order 9981 during the Korean War. 75% of units were integrated by November 1, 1951, which marks the starting point of our integration-period analysis.[41] With integrated units, are there still reasons to expect a racial fatality gap? We suggest there are not. Having soldiers of different races serving side-by-side renders many of the potential causes of disparate racial fatalities moot. Commanders' choices about positioning units, at least at the battalion-level, will not generate racially distinct outcomes. Issues of battlefield support, whether from flanking units or the air, dissipate with segregation's end. We thus expect Black and white soldiers to die at similar rates in integrated units.

Data after Integration

Analyzing post-integration fatality rates requires amendments to the approach used for the segregated period of the war. All individual-level data still comes from the National Archives and the Korean War Project. The complication is establishing a denominator for each race within each battalion. The segregated period could use the TO&E specification of 917 soldiers per battalion. The integrated period requires intra-battalion racial demographics. This is important since if, for example, we observe 10 Black fatalities within a given battalion-period, we do not know whether this is a high or low fatality rate. The implications are quite different if the unit has 10 versus 500 Black soldiers.

We collected new archival data from the National Archives in College Park, Maryland which provides information on the degree of racial integration across battalions. Regular personnel reports provided to the G-1 staffs indicate overall manpower for each unit, typically down to the battalion level, as well as the racial breakdown of manpower. Table 2 depicts a typical report. It includes authorized and actual personnel levels, plus a column often labeled "Class II" personnel which reports the number of Black soldiers. We collected and digitized all available personnel in-

[41] MacGregor 1981, ch. 17.

formation on intra-unit racial breakdowns for infantry units across the integrated portion of the war. Data was available for 594 battalion-periods, which represents 19% of total battalion-periods.[42] Based on the available data, Black soldiers constituted 13.7% of battalion personnel on average with a standard deviation 4.6%.[43]

The unit of analysis after integration becomes the racial battalion-period. For each battalion-period we record total Black and white soldiers and total Black and white fatalities. For instance, the 1st Battalion, 17th Regiment, of the 7th ID in the first half of February 1953 has two observations—one for white and one for Black soldiers. In the main analyses, we calculate total Black and white soldiers assuming each battalion had the TO&E prescribed number of 917 soldiers and that Black soldiers represented 13.7% of the unit—i.e., the observed sample mean. Secondary analyses limit the sample to only those 594 observations with archival personnel strength levels. The secondary analyses have over 1,100 observations because each battalion-period generates Black and white observations. Results are similar with either specification.

Results after Integration

We now address our second questions: did Black and white fatality rates differ after integration? Figure 3, which plots the probability of dying for each racial battalion-period, offers initial evidence that they did not. Solid lines represent the period averages by race. Two takeaways emerge. First, overall fatality rates are lower during the integrated phase (0.15%) than during the segregated phase (0.89%). This accords with the known history where the war's final two years consisted of

[42] As prior research notes, the production and retention of archival records can vary across observations (Balcells and Sullivan, 2018). In our case, recorded personnel levels split by race are widely available for six of the nine Army divisions in Korea from late 1952 through the end of the war. The fact that results are similar when the analysis is restricted to this subset of observations assuages concerns that systematic differences in documentation drive the conclusions.

[43] SI tests demonstrate that results hold when accounting for variation in the extent of unit integration. All findings are similar if aggregating fatality rates by race for the entire period rather than comparing *unit*-specific fatality rates.

	14th Regiment			27th Regiment			35th Regiment		
	Authorized	**White**	**Black**	**Authorized**	**White**	**Black**	**Authorized**	**White**	**Black**
1st Battalion	887	718	52	887	716	67	887	727	65
2nd Battalion	887	707	71	887	728	64	887	760	41
3rd Battalion	887	778	75	887	719	70	887	709	57

Table 2 – Battalion Strength Report for the 25th Infantry Division as of February 1, 1953.

stalemate punctuated by sporadic fighting. Second, the racial averages closely track each other with no sizable disjunctures. While variation across units is evident with some units losing nearly 12% of personnel in a given half-month, the aggregate patterns indicate no race-based fatality gap after integration.

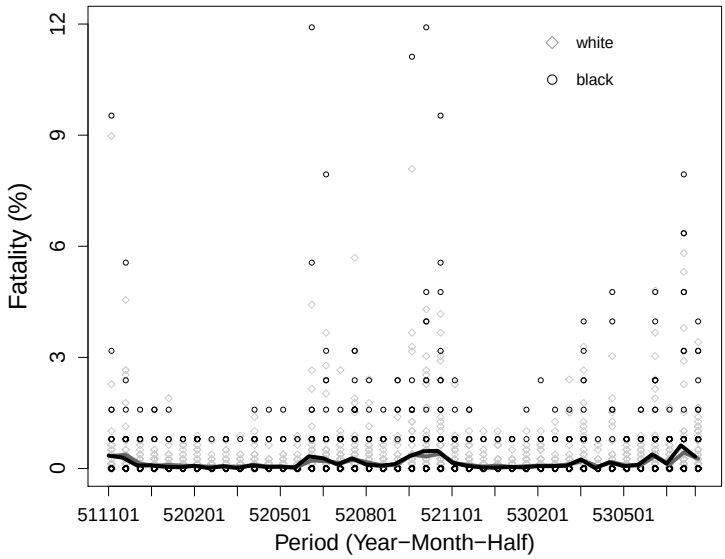

Figure 3 – Probability of US combat fatalities by race for each battalion in the integrated portion of the Korean War. Each point represents one racial battalion-period. Solid lines represent average racial battalion fatality rate for that period.

Regression results in Table 3 confirm the descriptive takeaways. Across specifications, fatality rates are similar for Black and white soldiers. Models 1-3 include all racial battalion-periods from the integrated phase of the war. To facilitate interpretation, we multiply the outcome variable by 100.

Model 1 shows that 0.15% of white soldiers died in the average half-month period following unit integration. Black soldiers died at essentially identical rates (0.004% coefficient). The marginal effect of moving from white to Black soldiers remains negligible across specifications including period or period and unit fixed effects. The latter specification (Model 3) compares Black and white fatality rates within the same battalion during the same period. As theorized, the difference in fatality rates post-integration is statistically insignificant. Models 4-6, which restrict the sample to observations with archival material on intra-unit racial demographics, yield similar

results.[44] The marginal effect of moving from white to Black soldiers remains statistically insignificant, regardless of included fixed effects. Fatality rates were similar for Black and white soldiers after integration, which accords with our expectation that their fates converged once serving in close proximity.

Table 3 – Fatality Rate by Race: Integration

	Average Personnel			Actual Recorded Personnel		
	(1)	(2)	(3)	(4)	(5)	(6)
Black Soldiers	0.004	0.004	0.004	−0.04	−0.04	−0.04
	(0.02)	(0.02)	(0.01)	(0.04)	(0.04)	(0.04)
Constant	0.15***	0.34***	0.22***	0.24***	0.72***	0.56***
	(0.01)	(0.06)	(0.08)	(0.03)	(0.07)	(0.16)
N	6,162	6,162	6,162	1,110	1,110	1,110
Period FEs	N	Y	Y	N	Y	Y
Battalion FEs	N	N	Y	N	N	Y

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the racial battalion-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Period and battalion fixed effects not shown. Outcome is probability of fatality multiplied by 100. Models 1-3 use the observed average for unit sizes while Models 4-6 only include observations where archival personnel data was available and that had at least 50 Black soldiers.

Fatality Gap Variance: Segregation and Integration

Black and white soldiers died at similar rates regardless of whether fighting in segregated or integrated units. Aggregate parity in fatality rates, however, masks important heterogeneity in fatality patterns depending on military staffing policies. This section answers our third question: did the shift from segregation to integration change the variability of racial fatality rates? Our analysis highlights the *potential* for unequal distribution of costs in the short term under segregation which disappeared under integration. The finding holds when accounting for the higher overall fatalities during the segregated period of the war.

[44] The analysis drops Black battalion-periods with fewer than 50 Black soldiers. A small dominator could produce large spikes in fatality rates. Results are similar with different cut points.

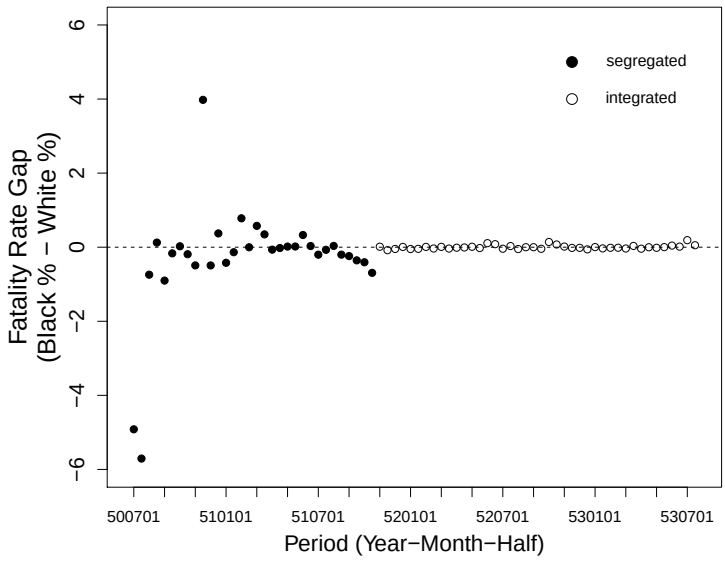

Figure 4 – Difference in racial fatality rates across the Korean War.

Figure 4 demonstrates how segregation affected fatality patterns. It plots the difference in mean fatality rates for Black and white units in each period with positive values on the y-axis indicating that Black units suffered higher fatalities. The variance of mean differentials was far higher under segregation than under integration. In July 1950, white units bore the higher costs. In November 1950, Black units did. The wild swings that occurred under segregation disappear after integration. Three statistical tests demonstrate that the difference in variances between segregation and integration is unlikely due to chance (results presented in the SI). The first is a regression with the absolute fatality rate difference for each period as the outcome variable and an indicator for segregation as the explanatory variable. Absolute racial fatality rate gaps were higher during the segregated portion of the war ($p < 0.01$). The second is Levene's test which shows that the variance of two vectors (segregated versus integrated periods) differs ($p < 0.01$). A third test employs randomization inference which does not rely on distributional assumptions.[45] Only 2% of 10,000 iterations produce a larger gap in fatality rate variance than the one observed in the actual data.

[45] Fisher 1935; Rosenbaum 2002.

A potential concern is that the war's integrated portion coincided with stalemate and a decline in combat intensity. Tests in the SI address the possibility that variance differentials between the segregated and integrated portions of the war stem from the latter's lower aggregate fatalities. First, using the previously discussed codings of fighting phases under segregation, we compare only those segregated periods of stalemate to periods under integration which holds fixed the nature of combat. We still find higher absolute racial fatality gaps and higher variance in these gaps under segregation than under integration. Second, we conduct an analysis that inflates fatality rates under integration to match the rates under segregation (a roughly 6x increase). All results hold when using inflated numbers. Higher short-term fatality rate gaps under segregation cannot be attributed to the higher overall fatalities during that portion of the war.[46]

The sacrifices soldiers paid in the Korea War happened to net out to roughly equivalent levels across racial lines during the segregated portion of the war. However, that should not obscure the imbalanced short-term consequences that segregation made possible. Segregating Black and white soldiers provided a permissive environment for substantial inter-racial differences in the costs of war. In aggregate, these short-term differences offset one another. Nevertheless, the pattern highlights potentially steep consequences of institutional staffing policies.

Conclusion

Dying in combat is often heralded as the ultimate act of sacrifice for one's state. This research note examines the consequences of segregationist policies as measured by the distribution of war's highest cost. We highlighted a tension in whether unit segregation would drive higher or lower Black fatality rates. Using newly collected and constructed battalion-level data, we empirically assess these competing possibilities. Ultimately, Black and white combat units suffered fatalities

[46] The move to integration removes the possibility of discrimination *between* military units, but it could increase racial discrimination *within* units. If true, the results might mask racially-motivated discrepancies occurring lower in the organizational hierarchy, such as at the company level. Analyses in SI Section 3.4 provide preliminary evidence this is not the case.

at similar rates during both segregation and integration. Qualitative and quantitative evidence evaluating units' operational assignments suggests that the acute manpower demands of the Korean War limited the potential for discriminatory commander discretion. Despite similar aggregate fatality rates, closer inspection reveals the contingent nature of that result during the segregation period. Racial fatality gaps fluctuated widely from period to period. In some months, white units bore the brunt of war's costs. In other periods, Black units did. It seems at least partly due to chance that these fluctuations offset one another, yielding similar aggregate fatality rates. These fluctuations essentially disappear after the integration of units. Consequently, race-based personnel policies opened the door to a skewed cost distribution within the military.

The Korean War's context highlights two potential scope conditions for the results. The first is the nature of the conflict being fought. The Korean War typifies conflicts where intense battlefield needs facing militaries—when caught off guard, unprepared, and undermanned—create conditions increasing the importance of obtaining contributions from all service members, regardless of race. Wars of choice or those with lower manpower demands may grant commanders greater leeway in how they employ military units. In less dire conditions, discriminatory intent could generate differential fatality rates. Whereas prior scholarship connects war's extreme stakes to transformations of the state and resource extraction,[47] this study reveals another consequence of wars fought under grim circumstances: battlefield imperatives incentivize allocating available societal resources (in this case military personnel) to wherever they are most needed. How states mobilize and employ military capabilities depends on how desperate a military situation they confront.

The second scope condition relates to the substance of discriminatory attitudes. The content of these attitudes varies across groups, generating different implications for the battlefield. For example, recent debates about whether women ought to serve in combat roles commonly highlight how women's lives are valued more, rather than less, those of men. These attitudes are emblematic of

[47] Tilly 1992; Scheve and Stasavage 2012.

a "protective paternalism,"[48] which contrasts markedly with the empirical observation that Black lives were commonly perceived to be worth less than white lives for much of US military history.

This study highlights several areas for future research. Most obviously, scholars can test the scope conditions discussed above. Taken together, the two points indicate that fatality distributions might differ if studying the same underlying question but if either segregation occurs along different demographic lines or combat intensity differs from that confronting the US military in Korea. Instances that vary along these dimensions might include segregation on the basis of gender in WW1 Russia, class in India, sect in contemporary Iraq, state of origin in the Union Army during the American Civil War, citizenship (vs. foreign nationals) in the United Arab Emirates, colonial (vs. metropole) origins in the French military in Indochina, or ethnicity in recent conflicts engaging Chechen and Israeli forces. Studying the issue in earlier US wars could also prove instructive. This approach holds fixed the racial dimension of segregation while allowing variation in combat desperation from comparatively high—e.g., WW2—to comparatively low—e.g., the Spanish-American War. If unit positioning operates as posited, we would expect commander biases to be evident during the Spanish-American War and muted during WW2.

Additionally, while we focus on the ramifications of discriminatory institutional policies for wartime fatality patterns, future work could reverse the question studied. The idea that sacrifice on the battlefield can affect perceptions of equality at home is one manifestation of the international relations concept of the second image reversed.[49] During the Korean War, politicians and civil rights activists used the successes of Black soldiers in their efforts to enact policies affording African Americans greater equality.[50] Krebs demonstrates how variation in the roles filled during military service—combat versus support—affect a group's ability to make civil rights gains.[51] New work might push these distinctions further by considering how differences in battlefield outcomes such

[48] Glick and Fiske 1996.

[49] Gourevitch 1978.

[50] Lerner 2018, 526.

[51] Krebs 2006.

as performance and cost-bearing, as opposed to only differences in military roles, factor into efforts to transform military sacrifice into domestic equality. Just as domestic discrimination can spillover to the battlefield, so too can battlefield events reverberate back to domestic politics.

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Supporting Information for "Segregation, Integration, and Death: Evidence From the Korean War"

Contents

1 Segregation Analysis: Results, Robustness, and Mechanisms

1.1 Clustering Standard Errors at the Battalion Level

Standard errors. Results from segregation period analysis (Table 1, Models 1-2) with standard errors clustered on the battalion.

Table A1: Fatality Rate by Race: Segregation–Clustered SEs

	Battalions in Korea	
	(1)	(2)
Black Battalion	−0.05	−0.17
	(0.13)	(0.13)
Constant	0.89***	0.82***
	(0.08)	(0.15)
N	1,670	1,670
Period FEs	N	Y

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Standard errors clustered on the battalion in parentheses. Period fixed effects not shown. Outcome is probability of fatality multiplied by 100.

1.2 Varying Battalion Size

Battalion size. The main segregation period analyses use the TO&E prescribed battalion size (917) as a denominator to calculate fatality rates. The analysis below examines whether systematic variation in battalion sizes such that either Black or white units were larger than the other would alter the results. As shown, even if white or Black units were on average 100 soldiers larger than the other, racial fatality rate gaps remain small and statistically insignificant. Analysis uses Table 1, Model 1 from the manuscript as the benchmark.

Table A2: Fatality Rate by Race: Segregation–Variation in Battalion Size by Race

	Battalions in Korea										
Avg white bn size vs. avg Black bn size	-100	-80	-60	-40	-20	0	20	40	60	80	100
Black Battalion	−0.14	−0.13	−0.11	−0.09	−0.07	−0.05	−0.03	−0.01	0.01	0.03	0.05
	(0.22)	(0.22)	(0.22)	(0.21)	(0.21)	(0.21)	(0.21)	(0.20)	(0.20)	(0.20)	(0.20)
Constant	0.94***	0.93***	0.92***	0.91***	0.90***	0.89***	0.88***	0.87***	0.86***	0.86***	0.85***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
N	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670	1,670

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Outcome is probability of fatality multiplied by 100. Analysis varies the average size of Black vs. white battalions.

1.3 Varying Integration Start Date

Date integration period began. The main segregation period analyses use the start of November 1951 as the point at which units are integrated. The analysis below shows that results do not depend on using this date as the cut point. Early and later dates yield similar results. Analysis uses Table 1, Model 1 from the manuscript as the benchmark. Integration was an admittedly gradual process which complicates the analysis. Some understrength white units—such as the 1st and 2nd battalions of the 9th Infantry Regiment, 2nd Infantry Division (ID)—incorporated Black soldiers as early as August 1950 due to manpower demands. However, the November 1, 1951 cut point remains promising as over 80% of Black soldiers remained in segregated units as late as May 1951 and the all Black 24th Regiment was only inactivated at the start of October 1951.

Table A3: Fatality Rate by Race: Segregation–Variation in Integration Cut Point

Integration start...	1H-09-51	2H-09-51	1H-10-51	2H-10-51	1H-11-51	2H-11-51	1H-12-51	2H-12-51	1H-01-52
Black Battalion	−0.01	−0.02	−0.03	−0.05	−0.05	−0.04	−0.03	−0.02	−0.002
	(0.23)	(0.22)	(0.22)	(0.21)	(0.21)	(0.20)	(0.20)	(0.20)	(0.19)
Constant	0.89***	0.89***	0.88***	0.90***	0.89***	0.87***	0.85***	0.83***	0.80***
	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)
N	1,436	1,496	1,556	1,613	1,670	1,727	1,784	1,844	1,910

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Model headings indicate Month Half-Month-Year. Standard errors in parentheses. Outcome is probability of fatality multiplied by 100.

1.4 Including All Within-Unit Fatalities

Include all fatalities. The main segregation period analyses only count fatalities when the individual's race matches the putative race assigned to that battalion. The analysis below shows that results are similar when including all fatalities in a battalion even when they do not match a battalion's assigned race. This includes white officers dying in Black battalions as well as Black soldiers dying in white battalions that experienced some integration before the November 1951 cut point. Analysis based on Table 1, Models 1-2 from the manuscript as the benchmark.

Table A4: Fatality Rate by Race: Segregation–All Battalion Fatalities Regardless of Individual Race

	Battalions in Korea	
	(1)	(2)
Black Battalion	0.07	−0.05
	(0.22)	(0.20)
Constant	0.98***	0.94***
	(0.07)	(0.31)
N	1,670	1,670
Period FEs	N	Y

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Period fixed effects not shown. Outcome is probability of fatality multiplied by 100. Includes all fatalities within a battalion-period regardless of whether an individual's race matches the assigned race of the battalion.

1.5 Skewed Fatality Rate Distribution and Central Limit Theorem

Skewed fatality rate distribution and central limit theorem. Battalion-period fatality rates during the segregated portion of the war are right-skewed (see Manuscript Figure 2). Most observations have low fatality rates but a few have exceptionally high rates (over 20%). A concern is that skewed distributions require larger samples for the central limit theorem to apply, which could distort the OLS results. Specifically, it would be problematic if the issue inflated p-values and thus increased the prevalence of null findings. We might then incorrectly fair to reject the null hypothesis when in fact we should reject it. Given the centrality of the null finding to the study, we address this concern using the following procedure.

1. Randomly assign observed outcomes (battalion-period fatality rates) to either white or Black battalions while maintaining the relative ratio of white to Black battalions.
2. Run the regression used for Manuscript Table 1 Model 1 and record the p-value.
3. Repeat the process 1,000,000 times.
4. Assess whether p-values less than 0.05 occur in approximately 5% of iterations. If it occurs less frequently, the null finding could stem from the skewed distribution of fatalities rather than a substantive basis.

Overall, as depicted in Figure A1 $p \leq 0.05$ occurs in 4.5% of the 1,000,000 iterations. Distributional skew creates a very modest inflation of null results. However, it is very unlikely this is the source of the segregation-era null result. The p-value obtained in Table 1 Model 1 (0.81) is greater than 81.5% of the p-values in the simulation. In sum, there is some evidence that the statistical procedure modestly inflates the likelihood of obtaining a null result but it is highly unlikely that our null result is merely an outcome of a statistical distortion rather than a lack of substantively different fatality rates across racial lines.

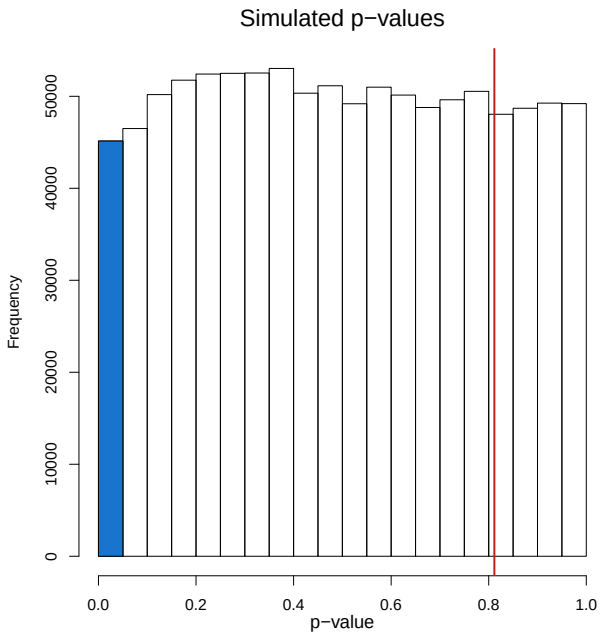

Figure A1: Distribution of p-values from 1,000,000 simulations. Blue highlights values less than 0.05, which occur in 4.5% of simulations. Vertical red line shows the true p-value from Table 1 Model 1 in the manuscript.

1.6 Fatalities in Periods of Defense, Offense, and Stalemate

Defense, offense, and stalemate. To better understand the mechanism underpinning the null result, we examine whether racial fatality gaps emerge under different modes of fighting. We divide the segregated portion of the war into phases of *defense*, *offense*, and *stalemate* from the US perspective. If fatality gaps emerge under one phase but not another, that provides insights on whether the aggregate null result stems from none of the theorized mechanisms being operative vs. multiple theorized mechanisms offsetting each other. As show in Table A5, results are consistent with the first scenario. Across all three phases of fighting, we find no evidence for substantively or statistically significant differences in racial fatality rates. To the extent that there individual periods do exhibit gaps, these are offset by other periods with a gap in the opposite direction (sizable offsetting gaps are most pronounced when on defense).

The three phases are coded as follows (year-month-half):

- *Defense*: 1950-07-01—1950-09-01 (North Korean invasion); 1950-11-02—1951-01-01 (Chinese entry); 1951-04-02—1951-06-02 (Adversary attempt to retake Seoul)
- *Offense*: 1950-09-02—1950-11-01 (Incheon landing and march north); 1951-01-02—1951-04-01 (Recapture Seoul)
- *Stalemate*: 1951-07-01—1951-10-02 (Armistice talks commence)

Table A5: Fatality Rate by Race: Segregation–Split by War Phase

	Defense	Offense	Stalemate	All
	(1)	(2)	(3)	(4)
Black Bn	−0.09	0.08	−0.31	−0.31
	(0.43)	(0.28)	(0.20)	(0.42)
Defense				0.71***
				(0.15)
Offense				0.11
				(0.16)
Black Bn*Defense				0.22
				(0.53)
Black Bn*Offense				0.39
				(0.56)
Constant	1.29***	0.69***	0.58***	0.58***
	(0.13)	(0.08)	(0.06)	(0.12)
N	662	546	462	1,670

*p < .1; **p < .05; ***p < .01

Notes: OLS regression with the battalion-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Outcome is probability of fatality multiplied by 100. Models 1-3 split sample by fighting phase (defense, offense, stalemate) from the US perspective. Model 4 includes the full segregation sample with an interaction between battalion race and fighting phase (stalemate serves as the base category for the fighting phase variable).

1.7 Additional Qualitative Evidence on Casualty Differentials Under Segregation

Diving deeper into periods when short-term fatality gaps emerged, historical evidence suggests that logistics drove the fatality rate discrepancy during early July. The three Black battalions of the 24th Regiment were the only Black units on the peninsula during the period. Having arrived on July 11, Black units simply had less opportunities for combat when compared to white units, some of which arrived more than a week earlier.[1]

There is similarly limited reason to believe that commanders' race-based choices created the racial fatality gap in late July. US forces were on the defensive during the period. We theorized that if commanders believe Black units to be less capable they may not assign them to critical defensive tasks. However, acute manpower concerns likely overrode such considerations. Consistent with war demands superseding commander dispositions,[2] elements of the 24th Regiment both attacked and defended during this period. The 3rd Battalion led the successful capture of Yechon (Bowers, Hammond, and MacGarrigle 1997: 91–93). In contrast, the full regiment was assigned to, and failed to, defensively repel the North Korean assault on Sangju (Bowers, Hammond, and MacGarrigle 1997: ch. 5). Black units in late July 1950 received offensive and defensive assignments with substantial risk of fatalities. Chance, rather than commander choice, seems to have caused the unequal burden during this fortnight with white fatality rates exceeding Black rates.

During the second half of November, when Black units suffered disproportionately, Chinese forces halted and reversed the US push north. Four of the Black battalions incurred heavy casualties during the Battle of the Ch'ongch'on River (Hannings 2007). A posited theoretical mechanism suggests that commanders may placed Black units at the front of US movements during this offensive phase of the war, causing them to suffer the worst fate if the enemy counter-attack. However, there is little evidence of differential unit positioning.

Elements of chance intrinsic to war largely account for the disproportionately high Black fatality rates in late November 1950, though we cannot entirely preclude racial bias. On one hand, the entire Eighth Army made the push north, of which the four Black battalions constituted a small fraction. On the other hand, holding the Infantry Division fixed, Black battalions suffered higher fatalities. While the Eighth Army suffered broadly, the Black battalions within it suffered at a higher rate. The average white battalion in the 25th ID suffered a 2.8% fatality rate whereas the all Black 24th Regiment within the 25th ID had a 6.3% fatality rate. The comparable fatality rates for white and Black units in the 2nd ID were 5.7% and 7.4%. Near the Ch'ongch'on River, Black battalions fought alongside white battalions but incurred higher costs. While Black units faced an onslaught from Chinese forces, the same was true of those white units flanking them. Unit positioning does not fully account for divergent fatality rates; rather, other factors partially explain the discrepancies. These include a communication failure which caused an all-Black task force to miss the retreat order and a poor-performing officer who led the 3rd Battalion of the 24th Regiment and subsequently disparaged his Black soldiers (Bowers, Hammond, and MacGarrigle 1997: 199–218).

[1] The choice of which battalions to deploy first to Korea stemmed from geographic proximity. The 24th ID was the first to arrive because it was stationed nearby in southern Japan (Maxwell 2018: 57).

[2] That said, some individuals continue to discriminate despite steep costs to doing so (Edelman, Luca, and Svirsky 2017), suggesting that some commanders, despite pressing military needs, could divide unit assignments in a discriminatory fashion.

2 Integration Analysis: Results and Robustness

2.1 Addressing Potential Challenges of Using the Race-Battalion as the Unit of Analysis

Imbalanced unit composition. Our use of *unit* fatality rates could mask meaningful gaps in racial *aggregate* fatality rates if battalions had high variation in their racial composition during the integrated portion of the war. The manuscript's analysis assumes that Blacks constitute 13.7% (the observed mean) of total battalion personnel (Table 3, Models 1-3) and also uses the observed racial composition when data was available (Table 3, Models 4-6).

The following example illustrates the potential problem. For ease of exposition, we use simple round numbers.

- Imagine there are two battalions (A and B), each with 100 total personnel.
- A has a 90/10 Black/white split while B has a 10/90 Black white split.
- A suffers 90% losses equally borne across racial lines (81/9 Black/white deaths) while B suffers 10% losses equally borne across racial lines (1/9 Black/white deaths).
- Using *unit* fatality rates as the outcome variable would indicate no racial fatality gap (equivalent Black/white loss rates of 90% in A and 10% in B).
- Using *aggregate* fatality rates, by contrast, reveals a stark racial fatality gap (82% vs. 18% for Black and white service member respectively).

To address the potential problem, we calculate aggregate period fatality rates for Black and white soldiers across all battalions. Using aggregated racial fatality rates, we continue to find no substantively or statistically significant differences in racial fatality rates, as shown in Table A6. The procedure necessarily reduces sample size (n=84), but the core substantive point continues to hold. In the average post-integration period of the war, 0.15% of Black soldiers died and 0.15% of white soldiers died. Moreover, the empirical distribution of unit composition shows that we never observe composition differentials as stark as that provided in the hypothetical example (10% Black in one unit and 90% in another). At most, Black soldiers made up 28% of a total battalion and the majority of battalions were between 12% and 17%.

Table A6: Integration: Aggregated Fatality Rate by Race

	Battalions in Korea	
	(1)	(2)
Black Soldiers	0.003	0.003
	(0.03)	(0.01)
Constant	0.15***	0.34***
	(0.02)	(0.03)
N	84	84
Period FEs	N	Y

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the race-period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Period fixed effects not shown. Outcome is probability of fatality multiplied by 100.

3 Segregation vs. Integration Analysis–Short-Term Differentials: Results and Robustness

3.1 Addressing Casualty Differences Between War-Periods

Institutional policy and absolute racial fatality rate gap differential. Let $\bar{y}_t^b$ and $\bar{y}_t^w$ equal the mean racial fatality rate in period t for Black and white units respectively. For each period t, we calculate an absolute racial fatality rate gap as $|\bar{y}_t^b - \bar{y}_t^w|$. This serves as the outcome variable for an OLS specification with *Segregation* as a binary indicator for whether that period had segregated or integrated units. Model 2 repeats this analysis but after inflating fatality levels under integration to match those under segregation. Fatality levels were lower in the latter portions of the war. Inflating fatalities insures that lower overall combat intensity cannot explain the near disappearance of short-term racial fatality rate gaps under integration as shown in manuscript Figure 4. Rather, integration itself accounts for the decline in short-term divergences.

Table A7: Short-Term Fatality Rate Differentials Under Different Institutions: Segregation vs. Integration—OLS

	Actual Fatalities	Inflated Integration Fatalities
Segregation	0.68^{***}	0.48^{**}
	(0.21)	(0.22)
Constant	0.04	0.24^{*}
	(0.14)	(0.14)
N	74	74

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Outcome is absolute difference in Black fatality rate and white fatality rate by unit in a given period, multiplied by 100. Larger racial discrepancies in a given half-month produces larger outcome values. Inflated model increases overall fatality rates under integration to match those of segregation to insure that a lower level of overall lethality in the latter phases of the war does not explain the decline in short-term racial fatality rate gaps.

3.2 Alternative Tests of Variance Differentials

Levene's test: institutional policy and variance differentials. Again let $\bar{y}_t^b$ and $\bar{y}_t^w$ equal the mean racial fatality rate in period t for Black and white units respectively. For each period t, we calculate a racial fatality rate gap as $\bar{y}_t^b - \bar{y}_t^w$ and create two vectors of these gaps, one for under segregation and one for under integration. Levene's test establishes whether the variance in these two vectors differs. Model 2 repeats this analysis but after inflating fatality levels under integration to match those under segregation for the reasons discussed for Table A11.

Table A8: Short-Term Fatality Rate Differentials Under Different Institutions: Levene's Test

	Actual Fatalities	Inflated Integration Fatalities
Levene's Test (Mean)	$p < 0.01$	$p < 0.05$
Levene's Test (Median)	$p < 0.01$	$p < 0.05$

Notes: Levene's test compares the variance of two vectors: (1) a vector with the absolute inter-racial fatality rate differential in each period under segregation and (2) a vector with the absolute inter-racial fatality rate differential in each period under integration. Inflated model increases overall fatality rates under integration to match those of segregation to insure that a lower level of overall lethality in the latter phases of the war does not explain the decline in short-term racial fatality rate gaps.

Randomization inference: institutional policy and variance differentials. Again let $\bar{y}_t^b$ and $\bar{y}_t^w$ equal the mean racial fatality rate in period t for Black and white units respectively. For each period t, we calculate a racial fatality rate gap as $\bar{y}_t^b - \bar{y}_t^w$ and create two vectors of these gaps, one for under segregation and one for under integration. Let v_s and v_i equal the variance of these vectors under segregation and integration respectively. We use $|v_s - v_i|$ as the test statistic for the randomization inference. Next, we randomly assign each $\bar{y}_t^b - \bar{y}_t^w$ to have occurred under segregation or integration, recalculate v_i and v_s given these assignments, and generate a test statistic based on these variances. We repeat this exercise for 10,000 iterations. Overall, just over 2% of these 10,000 iterations produce a test statistic as or more extreme than the one observed in the real data. Model 2 repeats this analysis but after inflating fatality levels under integration to match those under segregation for the reasons discussed for Table A11. In this reanalysis, 3.3% of the 10,000 iterations produce a test statistic more extreme than the one observed in the actual data.

Table A9: Short-Term Fatality Rate Differentials Under Different Institutions: Randomization Inference

	Actual Fatalities	Inflated Integration Fatalities
Randomization Inference (two-tailed)	<5%	<5%

Notes: Randomization inference (10,000 iterations) using a test statistic of the absolute difference of variance in the inter-racial fatality rate differential in each period under segregation vs. that same differential under integration. Inflated model increases overall fatality rates under integration to match those of segregation to insure that a lower level of overall lethality in the latter phases of the war does not explain the decline in short-term racial fatality rate gaps.

3.3 Advance Versus Stalemate in War

Advance versus stalemate. Casualty patterns undoubtedly differ in some ways across different phases of wars in general, and the Korean War in particular. The Korean War featured periods of both rapid US and adversary advances as well as extended periods of essentially stasis. Does the nature of the fighting occurring (advance vs. stalemate) explain the higher casualty variance under segregation compared to under integration? The specific concern is that the integrated period of the war coincided with stalemate whereas the segregated portion of the war featured US retreats, US advances, and stalemate.

To address the issue, we compare only stalemated periods of the war under segregation and integration. Precisely when the Korean War settled into a stalemate is subjective. We use two possible dates which produce substantively similar results. First, the first half of July 1951 marks the beginning of armistice talks between the combatants. A publication from the US Army Center for Military History identifies July 1951 to July 1953 as the "years of stalemate."[3] Second, we use the first half of May 1951 to mark the onset of stalemate, which follows the end of North Korean and Chinese efforts to recapture Seoul.

We repeat the analyses from above dropping all observations from before the stalemated portion of the war. While necessarily reducing the sample size (n=50 or 54), this insures roughly fixed war phases across the segregated and integrated observations. Results for the three variance differential tests are as follows:

- *Regression.* The absolute difference in Black and white fatality rates is higher under segregation than under integration, regardless of selected start date for stalemate. Differences remain statistically significant ($p < 0.001$).
- *Levene's test.* Variance in the absolute difference in racial fatality rates is higher under segregation than under integration, regardless of selected start date for stalemate ($p < 0.001$).
- *Randomization inference.* We again use the difference in absolute fatality rate variance across staffing policies as the test statistic. For the July 1951 and May 1951 stalemate onset dates, fewer than 10% and 1% of randomizations, respectively, produce a test statistic as extreme as the observed one.

In sum, holding fixed the nature of the war to periods of stalemate, we still observe higher variance in racial fatality gaps under segregated policies than under integrated policies. The relative stasis of the Korean War's later years cannot account for higher fatality rate gap fluctuations observed when soldiers served in segregated units.

[3] Birtle, Andrew J. 2000. *The Korean War: Years of Stalemate, July 1951-July 1953.* Vol. 19, No. 10., US Army Center for Military History.

3.4 Within- and Between-Unit Variation Under Segregation and Integration

Sources of variation. The potential sources of variation in racial fatality gaps changes between the segregated and integrated periods of the war. Under segregation, fluctuations in the racial fatality gap stem from between-battalion differences. Integration makes these between-battalion differences largely moot; instead fluctuations in the racial fatality gap stem from within-battalion differences. While the move to integration might remove the possibility of discrimination between military units, it could still be the case that discriminatory attitudes are driving differential fatality rates within units. We might then observe our variance results while masking a potential increase in within-unit fluctuations. If true, then racially-motivated discrepancies are simply pushed down the organizational hierarchy from the battalion level to, say, the company level. To evaluate whether this possibility is in fact occurring, we analyze within-unit and between-unit fatality fluctuations.

No clear evidence of elevated within-unit fluctuations under integration. First we evaluate whether within-battalion racial fatality rate gaps exhibited higher variance under integration, which could provide evidence of commanders assigning missions of disparate risks to soldiers of different races at, say, the company level. Calculating within-unit fatality gaps is easy under integration because we have racial variation within the battalion. Calculating an equivalent statistic under segregation is more difficult because there was no within-battalion variation in race. To deal with this challenge, we take the following approach:

- Randomly partition each battalion from the segregated portion of the war into a "Black" and "white" component of sizes that match the equivalent components from under integration (126 Black soldiers; 791 white soldiers).
- Calculate the racial fatality gap between these randomly generated subsets within a single battalion.
- To account for variation in combat intensity due to shifts between periods of advance and periods of stalemate, we calculate the racial fatality gap in three ways. The first uses the raw numbers. The second divides the raw gap by the number of total fatalities in the battalion period and sets those periods with no fatalities equal to 0. The third similarly divides the raw gap by the number of total fatalities in the battalion period but drops those periods with no fatalities.
- For each battalion under segregation, find the variance in the racial fatality gap. For instance, we calculate the variance of the fatality gap for each period during segregation for the 2nd ID, 9th Regiment, 2nd Battalion. Repeat this calculation for all battalions during segregation and then repeat the exercise for all battalions under integration. This is akin to recreating Figure 4 from the manuscript but for each battalion rather than in aggregate.
- Using the battalion variance as the outcome variable, we use OLS to assess whether this value is higher under segregation or integration. To qualify for the sample, a battalion must have at least 10 periods of data. Battalions with fewer periods are more likely to produce extreme variance values.

As shown in Table A10, there is no evidence of higher within-battalion variance under integration. There is no clear sign discriminatory attitudes are driving differential fatality rates *within* integrated units.

Little evidence of heightened between-unit fluctuations under segregation. To evaluate between-battalion fatality gap fluctuations, the nature of the data problem is reversed. We observe between-battalion variance under segregation when each unit had an assigned race. The equivalent designa-

Table A10: Within-Unit Variance in Fatality Rate Gaps—OLS

	Raw	Adjusted1	Adjusted2
Segregation	0.5846***	0.0026	−0.0093
	(0.0902)	(0.0030)	(0.0059)
Constant	0.1794***	0.0157***	0.0414***
	(0.0593)	(0.0019)	(0.0041)
N	132	132	106

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the battalion-policy period as the unit of analysis (e.g., a battalion across segregation is an observation; a battalion across integration is an observation). Variance of the fatality gap within a fixed battalion serves as the outcome variable. Model 1 uses the raw fatality rate gaps. Models 2 and 3 adjusts fatality rate gaps as described above to account for changes in the nature of fighting (e.g., advance vs. stalemate) across the Korean War. For inclusion in the analysis, a battalion must have at least 10 periods of data which avoids wild fluctuations across a battalion with few data points from driving the result.

tions definitionally do not exist under integration. To deal with this challenge, we take the following approach:

- Randomly assign each battalion from the integration period of the war a designated race with proportions equivalent to those from the segregated period of the war (roughly 8% of battalions are designated as "Black").
- The rest of the analysis follows the procedure from Section 3.1. Calculate the absolute racial fatality rate gap for each period using the randomly designated "white" and "Black" units for the integration period data.
- We use two approaches for generating absolute fatality rate gaps. The first uses the raw data. The second divides the gap by the total number of fatalities in that period to account for variation in the nature of fighting (e.g., advance vs. stalemate).
- Using the absolute fatality rate gap as the outcome variable, we use OLS to evaluate whether between-battalion variance differed between the segregated and integrated portions of the war.

As Table A.11 shows, once adjusting for level of combat intensity, there is no substantively meaningful difference in the between-unit fluctuations across the war.

Takeaways. Overall, we find no clear evidence of a change in either within- or between-battalion fatality fluctuations with the shift to unit integration. This reveals (1) that our existing result is not masking a spike in within-unit fluctuations and (2) that the existing result largely stems from the fact that integration removed the racial implication of between-unit fluctuations in fatalities. A battalion could suffer many fatalities in one period while another was hit hard the next, but once in integrated units this pattern no longer generated large fluctuations in the racial fatality rate gap.

Table A11: Between-Unit Variance in Fatality Rate Gaps—OLS

	Raw	Adjusted
Segregation	0.6083***	0.0005
	(0.2155)	(0.0004)
Constant	0.1122	0.0011***
	(0.1417)	(0.0003)
N	74	74

$^{*}p < 0.1$ $^{**}p < 0.05$ $^{***}p < 0.01$

Notes: OLS regression with the period as the unit of analysis where each half-month is a period. Standard errors in parentheses. Outcome is the absolute difference in Black fatality rate and white fatality rate by unit in a given period, multiplied by 100. Larger racial discrepancies in a given half-month produces larger outcome values. Adjusted models divide the raw fatality rate gap by the number of period fatalities to account for changes in combat intensity throughout the Korean War.

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