Battles and Spoils: Evidence from the British Museum

Junxi Liu*

This version: November 24, 2026

Click here for the latest version

Abstract

States rely on agents to fight their wars yet often pay them little. I ask whether battles systematically generated spoils, whether military officers benefited from these spoils, and whether spoils-rich campaigns affected officers' career choices, in the context of the British Empire. First, using novel British Museum catalog data and the battles that British forces fought between 1816 and 1913, I find that the British Museum acquired more artifacts from a battle's location in the year after the battle, and that acquisitions stayed higher for decades. These spoils arose from new access to a place's wealth and from direct taking on the field, with the increase larger in places Britain never ruled and stronger for artifacts the British Museum acknowledges as taken in war. Second, battles generated private gains for military officers. I link manually collected biographies of battle commanders to their wealth at death. Commanders of the battles that were followed by larger inflows of artifacts to the British Museum left higher probated wealth, controlling for pre-battle rank, personal characteristics, and family background. Third, spoils affected officers' career choices. Using newly digitized officer career movement data, I find that after the Indian Mutiny, a war rich in spoils, officers purchased more commissions to enter and advance in the regiments that had served in the campaign. Together, the results show that imperial warfare generated spoils on a large scale, that the gains reached not only the state but also the officers who carried it out, and that these gains influenced officers' career choices.

*Department of Economics, University of Warwick. Email: junxi.liu@warwick.ac.uk. I am grateful to James Fenske for his invaluable guidance throughout this project, to Bishnupriya Gupta and Sascha Becker for great suggestions and supervision, and to David Yang, Jacob Moscona, Josh Lerner, Namrata Kala, Debraj Ray, Manuel Bagues, Chicheng Ma, Saumitra Jha, Kim Oosterlinck, Jindi Huang, Andrew Kao, Yujia Wang, and participants at the LSE Economic History Graduate Seminar, the Cliometrics Conference, and the European Development in a Historical Perspective seminar at Harvard University for insightful comments. All errors are my own.

Bellum se ipsum alet. (The war will feed itself.)
Cato the Elder, on the conquest of Hispania
Livy, Ab urbe condita, XXXIV.9.12

1 Introduction

Imperial warfare is typically studied as a strategic choice by states.[1] States rely on agents to wage these wars. While economic models of conflict emphasize the role of material rewards in motivating agents (Blattman and Miguel, 2010; Ray and Esteban, 2017), states are often financially constrained and pay their military forces little (Parrott, 2012). In Victorian Britain, for instance, an army officer received less than half the pay of a War Office clerk of equivalent grade, and usually paid large sums to buy his promotions (Spiers, 1980; Bruce, 1980). How, then, did states compensate the agents who built their empires?

One explanation is that the spoils of war, an enduring feature of conflict, form a component of military compensation.[2] Historical research suggests that the taking of spoils was an organized, state-sanctioned feature of imperial warfare, and has documented famous cases in which military personnel profited from the captured wealth.[3] Many of these spoils are visible as cultural objects that were moved from their original societies into Western museums and salerooms (Sarr and Savoy, 2018; Stahn, 2023). Yet, systematic evidence on the relationship between battles, spoils, and private gains remains scarce, since records of spoils are sparse and rarely linked to specific military personnel.

In this paper, I study whether battles systematically yielded spoils, whether military officers benefited from these spoils, and whether the spoils affected officers' career choices, in the context of Britain between 1816 and 1913. This setting provides several advantages.

[1] For instance, states fight to secure resources (Acemoglu et al., 2012; Caselli et al., 2015), to open markets (Gallagher and Robinson, 1953; Alesina et al., 2000; Bonfatti and Coşar, 2022), or to outrank rival powers (Lebow, 2010; Hoffman, 2015).

[2] As early as the second century BC, Cato the Elder reportedly sought to supply his army from what it could capture locally (Livy, *Ab urbe condita*, 34.9.12). Redlich (1956) shows that from the Middle Ages to at least the eighteenth century, rulers used the prospect of booty to attract the soldiers they needed, and that underpaid armies lived on what they took. Hay (1954) documents the division of the spoils of war in fourteenth-century England. Saltzman (2021) examines French plunder of Italian art during Napoleon's campaigns. In the twentieth century, Nazi Germany looted art across occupied Europe (Nicholas, 1994).

[3] Lidchi and Allan (2020) document the taking of spoils in the Sikh wars of the 1840s, the Asante campaign of 1874, Omdurman in 1898, and Tibet in 1904. Tythacott (2018b) follows the loot of the Yuanmingyuan (Old Summer Palace) of 1860 into the salerooms. Patrizio Gunning and Challis (2023) study the plunder of Maqdala in 1868. Hicks (2020) traces the loot of Benin in 1897. Van der Kraan (1976) documents the Dutch taking of the Lombok treasure in 1894. Silverman (2015) describes the spoils that officers of the Congo Free State shipped to Belgian museums. Engels (1858) reported in the *New-York Daily Tribune* after the fall of Lucknow in 1858 that "some of these officers have made, literally, their fortunes".

First, Britain held the largest empire of the nineteenth century (Bell, 2007) and fought hundreds of battles that varied in timing and location (Jaques, 2007). Second, the British state allowed the taking of spoils in both the army and the navy, granting captured property to the forces that took it (Spiers, 2020; Aldous, 2020). In addition, until 1871, most army officers bought their commissions and promotions (Bruce, 1980), offering a measure of officers' career choices. Third, records of the displaced objects, the battles, the officers, and their personal wealth survive for Britain. The British Museum is one of the most prominent repositories of contested objects. Its catalog records where each artifact came from, when it arrived, from whom, and how it was acquired. I geocode each artifact and link it to comprehensive records of battles, research the careers of the battle commanders by hand, digitize probate records to obtain the commanders' wealth at death, and supplement the data with prize money records, promotion notices, and auction catalogs that I digitize to show how these spoils were turned into personal gains.

I find that spoils were a systematic product of British battles, that they reached the officers who led the fighting, and that they affected officers' career choices. I present three sets of results. The first follows the artifacts and shows that the British Museum's acquisitions from the places where Britain fought rose in the year after the battle and stayed higher for decades. The rise followed British victories, was larger in places Britain never ruled, and was stronger for artifacts the Museum acknowledges as taken in war, indicating the importance of access to new wealth and direct taking on the field. Outside the Museum, prize sales turned spoils into cash, and objects taken in the campaigns kept appearing in the auction houses. The second follows the officers' wealth and shows that the commanders of battles that yielded large spoils, proxied by the artifact inflow to the British Museum, died richer than their peers of similar backgrounds. They also went on more often to a peerage and high office, and prize money alone on average amounted to a large share of commanders' estates where records existed. The third follows the market for commissions and shows that after the Indian Mutiny, a campaign with large spoils, more officers bought commissions in or exchanged into the regiments that had fought it, relative to comparable regiments, indicating richer incumbents and more attractive regiments. Together, the results support the explanation of the systematic taking of spoils as compensation.

Historical background. Founded in 1753, the British Museum was the first national, public, and secular museum in the world (Caygill, 2002). Yet, many of its holdings have a contested provenance. Some of them are well documented as war loot and have faced repeated requests for return. The British Museum Act 1963, however, prohibits the Trustees

from disposing of objects (Savoy, 2022).[4]

The formal pay of military officers was low during the nineteenth century. In the army, for instance, a lieutenant-colonel received less than half the pay of a similar grade clerk, and no officer could live on his pay alone (Bruce, 1980; Harries-Jenkins, 1977). Before 1871 most army officers also had to buy their commissions and promotions, at prices that could exceed ten years of pay (Bruce, 1980). The navy paid its officers no better. For example, most lieutenants sat on only five shillings a day (Lewis, 1960).

Both services allowed military personnel to profit from what they captured. In the army, captured property was granted by the Crown to the troops and sold by prize agents, and the proceeds were paid out as prize money (Spiers, 2020). In the navy, an Act of Parliament in 1708 had granted captured property to the force and established rules for division by rank (Lewis, 1960; Aldous, 2020).[5]

Spoils reached the British Museum by various routes. First, the prize agents auctioned most of what the forces captured, either on the spot or at home, to dealers and collectors from whom the Museum could later buy (Tythacott, 2018a; Patrizio Gunning and Challis, 2023; Watt, 2023).[6] Second, military personnel could hold on to some spoils, which they could sell or give to the Museum directly, or sell to dealers and collectors from whom the Museum could later buy. Third, the Crown or government could also reserve objects, some of which were later transferred to the Museum.

Data. I carry out a large-scale data digitization and linkage exercise to enable the analysis. First, on artifacts, I scrape over 1.5 million records from the British Museum's online catalog[7] with detailed information including acquisition source and exhibition history. I geolocate each artifact's free-text, unstructured place of origin to the city or $1^\circ \times 1^\circ$ grid cell level with a large-language-model pipeline. To follow the objects that passed through the market, I digitize the 27,751 auction catalogues for 1750 to 1900 scanned in Brill's *Art Sales Catalogues Online*. A vision-language model reads every printed lot from 900,279 pages and identifies 1,803 lots that were taken in a British campaign.

Second, on battles, I digitize the Dictionary of Battles and Sieges from Jaques (2007),

[4]The British Museum has returned no contested object ever since. Exceptions to the rule are only for duplicates, human remains, or objects looted by the Nazis. The British Museum does allow loans to other museums. France, by contrast, recently passed a law that permits French public bodies to return to requesting states cultural objects illicitly appropriated during the colonial period (République française, 2026).

[5]The practice gradually ceased in the army after the Hague Conventions of 1899 and 1907 banned pillage (Thomas, 2020), and ended in the navy when the Prize Act 1948 abolished prize money.

[6]In an extreme case, the British Museum sent a staff member with the 1868 Magdala expedition forces. The army let him select objects before its prize auction, and he bought manuscripts directly at the sale (Patrizio Gunning and Challis, 2023).

[7]I collect every record returned by searching the Museum's geographical terms. The scraping was carried out in 2024. Objects without geographic information are excluded, but could not enter my design anyway.

8,401 narrative entries, extract the fields with a language model, and manually check all 474 battles that British forces fought in the period.[8]

Third, on battle leaders, I identify 317 commanders who led British forces from the battle dictionary, and manually research each of them in biographical dictionaries, museum archives, and genealogical databases to record their personal backgrounds, biographies, and career histories. To obtain officers' wealth at death, I digitize and compile all 16.1 million probate records for 1858–1996,[9] extract each decedent's name and estate value, and match 218 of the 245 commanders who died within the coverage to their recorded estates by hand.[10]

Fourth, on prize and rank purchasing, I digitize the *London Gazette*, the official public-notice journal of the United Kingdom, which by statute printed every commission, promotion, and prize money distribution. I digitize all 27,737 issues from 1665 to 1914 and extract detailed records of officer movements, including 102,368 promotion notices in 1816–1870, of which 24,070 by purchase, alongside 8,731 exchanges, 15,184 first commissions, and 18,516 retirements.[11] From its prize notices I identify 24 army prize funds of the period.

I combine the artifacts and the battles into a city-year panel that records how many artifacts the Museum acquired from each city and whether Britain fought there in each year. I match each commander to his battles through the narratives, and to his probate entry by his biographical information. I also link prize funds and auction sales to campaigns. The linked records therefore show, for the same battles, the artifacts that reached the Museum, the lots sold at auction, the prize money paid out, and the estates the commanders left.

Battles and artifacts. I first show that British battles raised the inflow of artifacts from the battle location to the British Museum. Using a Poisson pseudo-maximum-likelihood model with two-way fixed effects, I compare the same place before and after a battle with Britain, exploiting the timing of battles within locations. City fixed effects absorb all time-invariant characteristics of a city, for instance its appeal to collectors, and year fixed effects absorb shocks common to all cities in a year, for instance a Museum-wide collecting change.

[8] Miller and Bakar (2023) independently structure the same dictionary into the Historical Conflict Event Dataset (HCED). The contribution here is a Britain-specific operational definition rather than broader coverage. I manually check every analysis field for all 474 British battles, correct errors in the dictionary and in HCED's British-participation coding and geolocation, and retain the non-British battles for placebo tests. Appendix B.3 gives the comparison.

[9] The probate calendars of England and Wales list every estate granted probate from 1858. I follow Cummins (2021) who digitizes English death and probate records for 1892–1992. I extend the England and Wales coverage to 1858–1996 and supplement it with Scottish and Irish records.

[10] Half of the unmatched cases are officers who were born and died overseas. Section 3 gives more details. For probates before 1907, the probate calendar also gives the occupation (regiment and rank at death for military officers) of the decedent, which I use to identify military officers who did not lead battles.

[11] The notices identify the officer, his regiment, ranks before and after the move, with or without purchase, and the person he replaced. The Crown had fixed regulation prices for commissions of each rank, but buyers could pay illegal premiums above them, which were rarely documented.

In my strictest specification, I add country-by-year and city-size-by-year fixed effects, so that I compare a battle city only with cities of similar size in the same country and year.

I find that a British battle raises the Museum's acquisitions from the battle city in the following year by a factor of 8.4 to 17. At the sample mean, the baseline estimate corresponds to an increase from 0.7 artifacts in an ordinary year to about 6 artifacts. Summed over the battle year and the three years after it, 1,570 artifacts are attributed to the fighting, nearly a fifth of the Museum's acquisitions from the cities where Britain fought in the sample period. An event study around the time of battle shows flat pre-trends and an immediate positive, significant coefficient the year after the battle, so battle locations were not already on rising acquisition trends. In the long run, the Museum acquired 12 to 19 percent more artifacts per decade from battle cities over the battle decade and the five decades after it. The short-run rise captures the most direct effect that comes from the objects that the forces disposed of immediately after the fighting, mostly through prize auctions and government transfers. The rise over the long run reflects the objects that reached the Museum through indirect channels including dealers, auction houses, and officers' estates.

The result holds when I restrict comparisons to units without a recent battle, through a stacked difference-in-differences construction and a local-projections estimator that allow for heterogeneous effects (Cengiz et al., 2019; Dube et al., 2025), estimate by alternative estimators and functional forms, change the geolocation rules and impute missing locations, use other battle sources, drop outliers, vary the sample and the spatial unit, and allow spatial correlation. Placebo tests show that British defeats, civil war battles, and battles by other powers produce no comparable increase. Battles reassigned randomly to other battle years or other battle cities produce no comparable increase either. The placebos thus rule out warfare in general and accidental alignment as explanations.

The main threat to identification is that the Museum's acquisitions from a place rose after a battle for reasons unrelated to the fighting. The two-way fixed effects already absorb permanent differences across places and Museum-wide shocks in a year, and the strictest specification compares a battle city only with similarly sized cities in the same country and year, which absorbs any trend or shock shared by a whole country or by cities of similar size. What the fixed effects cannot absorb is a place-specific, time-varying condition that was correlated with the timing of a battle and also moved objects toward the Museum. Such a condition could have been moving objects before the battle year or only from that year on. The flat pre-battle coefficients in the event study rule out a condition that was already moving objects before the battle year, and recent acquisitions from a place do not predict a British battle there. What remains is that Britain chose the year of a battle in response to a condition that was also moving objects from the battle's location to the Museum, but only

from that year on. If so, the battle would coincide with acquisitions that would have arrived without the fighting. For instance, Britain could have chosen to strike in the year a ruler fell, when his court's objects were dispersing. To address this concern, I identify 34 incident-triggered battles, those set off by a prior anti-British incident that preceded Britain's decision to fight, such as the killing of a British envoy or the capture of a British ship. Estimating the effect separately for these battles yields positive and significant coefficient estimates.

I then turn to the mechanisms behind the post-battle inflow of artifacts. First, battles created important access for British forces to a place's wealth. The inflow follows victories only, and is largest from cities that Britain never ruled at any point in the sample period. It is also larger in countries with less developed military institutions and a larger stock of historical material culture, consistent with an acquisition opportunity that depended on both the effectiveness of local resistance and what a place held. Second, the forces took objects directly on the field. The effect grows as I narrow the outcome to artifacts acquired from military officers, to artifacts whose records connect them to a war, and to artifacts the Museum itself acknowledges as loot, plunder, or capture. Importantly, battles also raised the inflow of artifacts that fall in none of these three groups by about as much as the inflow of all artifacts, so the catalog's own records capture only a small part of what the fighting brought to the Museum. Third, officers and soldiers had convenient means to turn the spoils into cash. The 20 prize funds whose records state a total amount add up to about £3.4 million, or £530 million at 2025 prices. The auction sales catalogues contain 1,803 lots that were documented to have been taken in war from 19 campaigns, and many were still selling ten or more years after the fighting.

Officers' wealth. I next show that battles generated returns to officers who carried out the fighting. Testing whether spoils reached the officers requires a measure of how much each campaign yielded in spoils, and no records formally document it. The British Museum's inflow from a battle's location is a visible imprint of the taking, so I use it as a proxy for spoils. In the baseline, I classify a battle as artifact-heavy when the Museum acquired more than twice as many artifacts from the location after the battle as before it, using three- and twenty-year windows separately.[12] I also allow for alternative thresholds and windows for classifying a battle as artifact-heavy. I link commanders' probated wealth to the number of artifact-heavy battles they led. I control for predetermined characteristics: rank at battle, age at first battle, birthplace, noble descent, military parentage, and service type. The estimates therefore compare commanders who led artifact-heavy battles only with commanders of similar rank, age, birthplace, and family background who did not.

[12] When the pre-battle window has no artifacts, I require more than five artifacts in the post-battle window.

On the three-year window, which captures spoils that reached the Museum quickly, each additional artifact-heavy battle is associated with £14,400 in additional wealth at death at 1900 prices (£2.49 million at 2025 prices). The estimate is £13,400 on the twenty-year window, which allows for delayed arrivals and identifies more artifact-heavy battles. These estimates correspond to roughly 70 percent of the sample mean. The results are similar under alternative definitions, windows, and functional forms, and when I trim or winsorize the largest estates. The wealth premium associated with artifact-heavy battles came on top of a broader return to battle command. I compare battle commanders with the 13,556 military officers in the full probate records who were not battle commanders, controlling for rank at death and decade of death as documented in the probates. Battle commanders who led no artifact-heavy battles still left about £10,900 more than non-commanders.

The spoils reached commanders' estates through three main mechanisms: prize money, the sale of retained objects, and the careers that campaigns opened. First, using prize money records from the *London Gazette*, parliamentary debates, and commanders' biographies, I obtain a prize money value for 29 of the 218 commanders. For about a fifth of these commanders, prize money can explain more than a quarter of their wealth at death. Second, the auction sales catalogues also document cases where officers sold objects they had taken in the campaigns. Third, artifact-heavy battles also predicted career rewards. Using the twenty-year window and the same predetermined controls as the probate analysis, each additional artifact-heavy battle raised the chances of a peerage at death by 13 percentage points on a mean of 7 percent, and of high office by 9 points on a mean of 28 percent. Commanders who died within three years of their last battle left much smaller estates than their peers, suggesting that career rewards took time to accumulate.

Officers' career choices. I then show that more officers paid to enter and advance in the regiments that fought a campaign with large financial gain. Until 1871, Army officers in most regiments could buy commissions to get promotion, exchange into another regiment, or sell their commissions on retirement. Civilians could enter a regiment by buying a first commission. The Indian Mutiny of 1857–58 provides a setting where officers received large financial rewards. Its gazetted prize money from looted treasure topped £1.2 million (£198 million at 2025 prices), one of the largest in the study period.

To investigate its effect on commission purchases, I compare the 25 purchasable regiments whose principal campaign was the Indian Mutiny with 31 purchasable regiments that saw no substantial combat using a yearly panel over 1848–1868. I find no upward differential movement before the campaign and a subsequent rise of 45 percent of the treated regiments' pre-campaign mean. The result holds under alternative comparison groups and functional forms, is robust to a wild cluster bootstrap by regiment, and shows similar results in a

separate prize-heavy case other than the Indian Mutiny. Turning to mechanisms, more outsiders exchanged into or bought first commissions in the treated regiments. Incumbents also bought more promotions within their regiments, the largest part of the rise, and purchases into vacancies left by retirements account for less than a third of it. Spoils therefore drew outsiders toward the regiments that had earned them, and incumbents bought their next steps, whether with their prize money or in expectation of further spoils.

Taken together, the results show that British battles generated spoils systematically, on a scale that raised the British Museum's acquisitions from the places where Britain fought for decades afterward. These results also indicate that spoils were a regular supplement to officers' formal pay, large enough to enrich the commanders who led the fighting and to make service in the regiments that had fought more attractive.

Related literature. This paper speaks to four literatures. The first is the economics of conflict, and within it the question of who fights and who benefits (for surveys, see Blattman and Miguel, 2010; Ray and Esteban, 2017; Kimbrough et al., 2020; Fenske and Voth, 2024). For states and economies, this literature ties warfare to fiscal capacity (Besley and Persson, 2008, 2009; Dincecco and Prado, 2012) and to long-run income (Voigtländer and Voth, 2013). For the individuals who fight, economic theory models the choice between producing and taking (Dal Bó and Dal Bó, 2011). Most empirical evidence measures potential gains to armed groups, such as the value of commodity output, rather than what individuals actually took (Collier and Hoeffler, 2004; Dube and Vargas, 2013; Berman et al., 2017). Sánchez de la Sierra (2020) observes realized takings by armed groups, but does not measure what individual fighters received. The gap that remains is what the soldiers of a state army gained from the battles they fought. I measure those gains for the largest empire of the nineteenth century. The commanders of the battles that yielded large spoils died richer than their peers, and more officers bought commissions in the regiments that had fought a spoils-rich war. The purchase records also offer suggestive evidence on the individual's decision to fight, a margin where evidence is scarce (Blattman and Miguel, 2010; Fenske and Voth, 2024), since more outsiders bought first commissions or exchanged into those regiments. Most directly, the results address two readings of British military institutions. The traditional view treats officers as salaried servants of the state (Smith, 1776; Tilly, 1990) and looting as a failure of discipline, incidental to how the army was paid (Sandholtz, 2007). An alternative view, as proposed by Allen (1998), reads the purchase system and prize money as an incentive contract in which the price of a commission capitalized the expected returns to service. The evidence supports the incentive contract reading. Returns beyond pay were systematic, and officers bought their way into the regiments that had earned them.

The second is the literature on the cost and returns of empire. A large literature measures

what empire cost the colonized, through the slave trades, the institutions it imposed, the labor and taxes it took, and the violence it used (Acemoglu et al., 2001; Banerjee and Iyer, 2005; Nunn, 2008; Dell, 2010; Huillery, 2014; Dell and Olken, 2020; Lowes and Montero, 2021). The taking of treasures and cultural objects in war remains little studied in this literature, even though it has been a visible practice of empire (Barringer, 1998; Stahn, 2023). I provide the first large-scale evidence on the taking of cultural objects from the places where Britain fought. On the returns of empire, economic historians have long asked whether empire paid the nation that ran it. Hobson (1902) argued that empire was a loss for the nation but a gain for certain classes and trades within it, and later work measures what the empire cost British taxpayers (Davis and Huttenback, 1982, 1986; O'Brien, 1988), what it returned to investors (Offer, 1993; Bogart and Chaudhary, 2019), and what it added to the economy (Heblich et al., 2022; Dal Bó et al., 2025). A related literature measures the private returns to public office, including for the men who ran the empire (Eggers and Hainmueller, 2009; Querubín and Snyder, 2013; Guardado, 2018; Xu, 2018). My results give an individual-level accounting on the military side. The men who carried out expansion earned returns beyond their pay, so an accounting confined to the nation and its investors understates the private gains from empire.

The third is the economics of art and culture, and the scholarship on museology and collecting. A growing literature in the economics of art treats art as an asset (Ashenfelter and Graddy, 2003), traces its markets through war and occupation from auction records (Oosterlinck, 2017; Euwe and Oosterlinck, 2023), and asks whether it holds its value in crises (David et al., 2024). Fewer studies examine looting and the market for antiquities, among them Fisman and Wei (2009) on the smuggling of cultural property, Kremer and Wilkening (2025) on export rules for antiquities, and Basnet Silwal (2023) on the destruction of heritage in war. These studies focus on what art is worth, how its markets behaved in crisis, and how the trade in antiquities should be governed, but not on who took the objects or how they reached the museums. Historians, archaeologists, and curators have shown that museum collections grew with the empire and were stocked by its officers and officials (MacKenzie, 2009; Longair and McAleer, 2012), and have traced the spoils of particular campaigns from the battlefield into the museum (Jasanoff, 2005; Tythacott, 2018a; Finn, 2018; Hicks, 2020; Patrizio Gunning and Challis, 2023). This scholarship rests on qualitative evidence from individual cases, leaving a gap in systematic quantitative evidence on the scale of the taking and on what the men who took it gained. Using the Museum's records supplemented by auction data, I measure the taking from battlefields to the British Museum over a century and link it to the military officers who carried it out. Two of the findings matter for provenance research and for the policy debate on restitution claims that now

rest on such histories (Sarr and Savoy, 2018; Stahn, 2023). First, an institution's own labels understate the taking, since acquisition notes are sparse and much of the loot arrived through dealers and salerooms rather than from the men who took it. Second, the arrivals of spoils could stretch over decades, so researchers who check only the artifacts acquired soon after a war will miss many of the objects taken in it.

The fourth is the literature on state capacity and within it the question of how states motivate the agents who act for them (Besley and Persson, 2009, 2011; Finan et al., 2017; Besley et al., 2022), and more generally on organizational economics (Gibbons and Roberts, 2013). This literature shows that pay, promotion, postings, and public recognition matter for selecting and motivating agents (Dal Bó et al., 2013; Bertrand et al., 2020; Khan et al., 2019; Ager et al., 2022), and that patronage and connections shape how agents perform (Xu, 2018; Voth and Xu, 2022). This literature also traces how states had to raise taxes and borrow to finance wars (Tilly, 1990; Brewer, 1989), although their capacity to do either was limited (Besley and Persson, 2009; Johnson and Koyama, 2014). Historically, states paid many of their agents with various forms of non-salary compensation, from tax farmers to privateers (Johnson and Koyama, 2014; Hillmann and Gathmann, 2011). States later replaced these agents with salaried officials and state-funded military forces (Tilly, 1990; Parrillo, 2013), a shift that classic accounts link to the end of reliance on plunder by military personnel (Smith, 1776; Redlich, 1956). I show that the largest empire of the nineteenth century still systematically met part of its officers' compensation using a share of what they captured without drawing on state finances, and the returns affected officers' career choices. More broadly, the results address how organizations reward their agents beyond wages, an important question in organizational economics (Holmström and Milgrom, 1991; Gibbons, 2005).

The paper proceeds as follows. Section 2 sets out the institutional background. Section 3 describes the data sources. Section 4 presents the artifact evidence. Section 5 presents the officer-level evidence. Section 6 concludes.

2 Background

2.1 The British Museum and its collecting

The British Museum. Founded by an Act of Parliament in 1753, the British Museum was the first national, public, and secular museum in the world (Caygill, 2002). The British Museum kept systematic records of its acquisitions. From early in its history, detailed registers have recorded when an object entered the Museum and the person or institution

from whom it was acquired (Caygill, 2002; MacDonald, 2023). The collection itself was selective. Trustees could refuse gifts, and Museum officers had to justify purchases before the Trustees allocated funds (MacDonald, 2023).

The Museum pursued an encyclopedic ambition to encompass world culture from the very beginning (Caygill, 2002), and material from outside the British Isles is central to the collection.[13] Historians of collecting tie the collection's growth to the expansion of empire and document how objects entered British museums through military campaigns, colonial administration, and missionary activity (MacKenzie, 2009; Barringer and Flynn, 1998; Lidchi and Allan, 2020). The British Museum Act 1963 prohibits the Trustees from disposing of objects except in narrow cases (Savoy, 2022).[14] Appendix A.1 provides further detail on the Museum's background and catalog.

How artifacts entered the Museum through warfare. Artifacts entered the British Museum by various routes,[15] and wars fed several of them. First, loot and captured property were systematically disposed of after a battle. They were often auctioned for prize money or retained by the state as official booty (Lidchi and Allan, 2020; Spiers, 2020).[16] The British government then transferred some of the booty it retained directly to the British Museum. For example, the Foreign Office handed over 200 Benin bronzes within a year of the 1897 expedition to Benin City (Hicks, 2020). Others entered the market, and the Museum acquired them later from salerooms, dealers, and collectors, as it did with pieces from the Yuanmingyuan in Beijing, which British and French troops looted in 1860 at the end of the Second Opium War (Tythacott, 2018b). In one extreme case, the Museum even sent one of its staff with the Magdala expedition, and he bought manuscripts and regalia at the army's auction in the field (Patrizio Gunning and Challis, 2023).

[13] My compilation of its catalog records shows that roughly three-quarters of the artifacts it acquired during 1816–1913 came from outside the United Kingdom (see Section 3.1).

[14] British Museum, "Deaccession Policy," 2024, https://www.britishmuseum.org/sites/default/files/2024-07/Deaccession-policy-2024.pdf. In reality, the British Museum has never permanently returned any contested artifacts in modern times, but rather only loaned artifacts in selective cases. By comparison, France has legalized restitution and enacted a general statutory framework for restitution in May 2026. Law No. 2026-351 permits French public bodies to return to requesting states cultural objects illicitly appropriated between 20 November 1815 and 23 April 1972 (République française, 2026).

[15] For instance, Stahn (2023) distinguishes four forms of colonial acquisition: punitive expedition, commerce and colonial collecting, missionaries, and gift. Longair and McAleer (2012) discuss how objects moved through networks of officers, administrators, travelers, and curators to the British Museum. Lidchi and Allan (2020) treat military collecting as a distinct phenomenon, in which the prize system converted loot into money and trophies passed into museums. Stevenson (2019) describes the division of excavated finds between Egypt and foreign excavators and their distribution to the museums that sponsored the digs.

[16] The army and the navy ran the system slightly differently. Naval prize was codified in statute from 1708 and distributed by rank under a fixed scale (Lewis, 1960). Army booty belonged to the Crown, which sanctioned its division among the troops as prize money, and prize agents appointed by the force conducted the sales (Spiers, 2020). Section 2.2 gives details.

Second, officers and soldiers kept what they could, and some of it later reached the Museum from their own hands or through dealers and collectors. For example, Captain Clarence Johnson participated in the suppression of the Boxer Rebellion in Beijing. During the occupation, he obtained the Admonitions Scroll, a painting from the imperial collection. He sold it directly to the Museum three years later (McCausland, 2003).

Third, war and occupation opened other routes.[17] After Britain occupied Egypt in 1882, the Egypt Exploration Fund, co-founded by a British Museum keeper, began to dig in 1883, and British excavations in Egypt went on to send hundreds of thousands of objects to some 350 institutions in twenty-seven countries over the following century (Stevenson, 2019).[18]

The routes differed in speed. Booty that the state transferred or artifacts that the Museum bought at the prize sale would arrive at the Museum within a year or two of the fighting. Artifacts that officers and soldiers kept, or that passed through dealers and auction houses, could arrive years later. A British battle should therefore raise the Museum's acquisitions immediately. That immediate rise understates what the battle eventually moved. The slow channels imply that the effect could persist for decades. Section 4 tests these implications. Appendix A.2 describes these routes in more detail and Appendix A.3 gives more case studies.

2.2 Military officers and the spoils of war

Military pay and commission purchase in the army. Military historians generally agree that Britain paid its officers and men badly (Barnett, 1970; Lavery, 1989; Chandler and Beckett, 1994). Wellington wrote in 1833 that officers received "but little for their service besides the honour of serving their king" (quoted in Bruce, 1980). Army officers' rates of pay varied from £96 per annum for an ensign to £365 for a lieutenant-colonel, and were fixed from 1806 until 1914 (Spiers, 1980; Wood, 2011). These rates represented less than half the remuneration paid to clerks of equivalent grades in the War Office (Spiers, 1980). No officer could live on his pay alone (Bruce, 1980; Harries-Jenkins, 1977). Naval officers were also poorly paid, if not poorer, and depended on prize. After 1815, some 3,000 of the navy's 4,000 lieutenants sat on half-pay of about £90 a year (Lewis, 1960). Ordinary soldiers and sailors earned even less. An infantry private or an able seaman earned about £18 a year (Spiers, 1980; Aldous, 2020), both well below the £40 that an agricultural laborer earned

[17] The Elgin Marbles, one of the Museum's most famous acquisitions, were not battlefield loot, yet their removal also depended on a war. Lord Elgin's agents removed the Parthenon sculptures beginning in 1801 under a permit that the Ottoman government granted while a British army was driving the French out of Egypt on its behalf, and the Select Committee that recommended their purchase for £35,000 in 1816 attributed the Ottoman favor to that campaign (Caygill, 2002; Robertson, 2019).

[18] My compilation of the Museum's catalog records at least 11,421 artifacts acquired between 1882 and 1913 that name the Fund as their source, and 22,183 across all years (Section 3.1).

in 1815 (Williamson, 1982). Appendix A.4 gives the pay scales, contemporary benchmarks, and present-day values.

Army officers even had to pay for their rank.[19] From 1660 to 1871, purchase was the ordinary route to commission and promotion as far as lieutenant-colonel in the cavalry and infantry (Bruce, 1980).[20] For instance, the 1854 tariff priced a major's commission in the infantry at £3,200 (£500,000 at 2025 prices), roughly eleven years of a major's pay, with commissions in the cavalry and the Guards costing more. Buyers often paid an illegal premium above the tariff, larger for more prestigious or desirable regiments (Bruce, 1980). Appendix A.4 gives the full tariff and the premiums.

Prize money and the legality of loot. Captured property was a regular part of military remuneration in both services. In the army, the Crown granted captured property to the troops, and prize agents auctioned the loot: gold, jewels, and other valuables.[21] Officers and soldiers then received their shares of the proceeds in cash as prize money (Spiers, 2020), and the larger funds were paid out under Royal Warrants. Booty was "a plentiful by-product of the British wars of empire" (Spiers, 2020), and officers' pay had been fixed on the expectation that they would supplement it with the profits of war (Bruce, 1980). The navy ran the same system in a more formal way. Since 1708, an Act of Parliament had granted captured property to the officers and men who took it, and each war's Prize Act fixed how the proceeds were split by rank (Lewis, 1960; Aldous, 2020). Prize "was one of the great inducements in the naval service, especially to officers," and "even lieutenants and warrant officers could become quite wealthy, given luck" (Lavery, 1989). Appendix A.2 gives more details on prize money in the military.

The sums could be large. The suppression of the Indian Mutiny of 1857–58 yielded

[19] The navy had no purchase. A boy entered the service when a captain agreed to take him aboard, usually through family connections, and he became a lieutenant by passing an examination (Lewis, 1960; Rodger, 2006). Promotion above lieutenant went by selection. The Admiralty and the commanders-in-chief chose whom to make commander and captain, and from captain upward officers rose by seniority (Lewis, 1960; Rodger, 2006). For the step to captain, Voth and Xu (2022) show that lieutenants with family ties to the admirals in charge were promoted faster and then fought better than those without.

[20] The account of the purchase system follows Bruce (1980), the standard history of the subject. The practice descended from the proprietary regiments of the seventeenth century, in which officers held their companies as property, and an official tariff of prices dates from 1720. A candidate had to be at least sixteen, to be recommended by someone in whose respectability the Commander-in-Chief had confidence, and, from 1849, to pass a qualifying examination, and every entrant began in the lowest commissioned rank. About a third of commissions changed hands without purchase, mainly through vacancies created by death and through cadetships. Above lieutenant-colonel, promotion went by seniority. The Cardwell reforms abolished purchase in 1871 and compensated officers for the value of their commissions (Bruce, 1980).

[21] The English word "loot" itself is a product of plunder. British troops in India adopted the Hindustani lūṭ, plunder, as their own word for what they captured. It appeared in print in an Anglo-Indian vocabulary of 1788, and the word travelled with the army through the Indian and China campaigns. Colin Campbell used it in a letter of 1842, and Lord Elgin in 1858 (Yule and Burnell, 1886).

one of the largest prizes of the century. The eleven funds granted by its Royal Warrants sum to about £1.2 million (£198 million at 2025 prices).[22] The Banda and Kirwee booty of 1858 alone was valued at £700,000 when seized, and by 1870 about £550,000 of it had been distributed to the troops (Parliamentary Papers, 1870). The first Banda and Kirwee distribution gave a private £50, nearly three years of his pay (London Gazette, 1867). The fund was one of the "great hauls" through which the Commander-in-Chief Colin Campbell "became wealthy in [his] old age" (Biddulph, 1933). Engels wrote in the *New-York Daily Tribune* on the sack of Lucknow that the prize agents "convert loot into a system" and that "officers and soldiers went into the town poor and debt-ridden, and came out suddenly enriched" (Engels, 1858).

Politicians condemned looting throughout the nineteenth century, but it was never banned. For example, after the Second Opium War ended in 1860, the Lords questioned whether the sack of the Yuanmingyuan, a royal residence in Beijing, was vandalism (Parliamentary Papers, 1861).[23] In 1871, Prime Minister Gladstone condemned the army's removal of the crown and chalice from Magdala (Parliamentary Papers, 1871a).[24] However, looting was allowed, or at least accepted, throughout the nineteenth century (Spiers, 2020).[25] In the navy, taking was already lawful (Aldous, 2020).[26] The Hague Conventions of 1899 and 1907 then forbade pillage and the seizure of works of art, and brought the era of lawful taking on land to a close (International Peace Conference, 1899; Second International Peace Conference, 1907).[27] In the navy, prize money lasted until the Prize Act 1948 abolished it.

[22]The funds are listed in Section 3.4. Not every notice states a total. The Ghuznee distribution of 1849, for instance, prints only each rank's share, from £379 for a major-general to five shillings for a private.

[23]When the Lords voted their thanks to the China forces on 14 February 1861, the Marquess of Bath called the sack "an act of vandalism" fit to rank with the burning of the library of Alexandria. The Duke of Somerset, for the government, defended it as retaliation for the treatment of British prisoners. The best-known condemnation came from Victor Hugo, who wrote to Captain Butler on 25 November 1861 that "two bandits" had entered the Yuanmingyuan, one to plunder and one to burn, and that history would call them France and England (Hugo, 1875).

[24]The Commons were debating whether the state should buy the crown and chalice. Gladstone said he "deeply lamented, for the sake of the country, and for the sake of all concerned, that those articles, to us insignificant, though probably to the Abyssinians sacred and imposing symbols, or at least hallowed by association, were thought fit to be brought away by a British Army."

[25]Prize was an informal part of army practice, endorsed by the Treasury and the War Office but described in no regulation (Spiers, 2020). Wolseley's *Soldier's Pocket-Book* (Wolseley, 1886), a field manual for officers, sets out the procedure. On prize, the book states that booty belongs to the Crown and is granted at the Sovereign's pleasure. It tells the general to have officers elect prize agents, allows sale by auction on the spot or at home, and gives the scale of shares by rank. Appendix A.2 gives the details.

[26]The Admiralty Court Act 1840 extended the prize court's jurisdiction to booty taken on land, and the Naval Prize Act 1864 consolidated the law of prize (Aldous, 2020).

[27]The conventions were a landmark, but they did not completely end the practice. Officers of the 1904 Tibet mission looted the monasteries of Gyantse against an order that forbade it (Myatt, 2011, 2012). Nazi Germany looted art across occupied Europe in 1939–45 (Nicholas, 1994).

3 Data

3.1 British Museum collection

Full data. I scrape the online collection database of the British Museum and obtain metadata for 1,532,147 unique artifacts.[28] Each artifact is identified by a unique Museum number and contains a rich set of fields, including a short description of the artifact, object type, production date, find spot, production place, acquisition date, acquisition source, materials, culture, and exhibition history, among others. Appendix B.1 describes the full set of variables available, and Figure A.1 shows a representative catalog entry.

Geolocation. I geo-locate each artifact's place of finding using the "find spot" variable recorded by the British Museum. The raw location information is written in natural language and varies in precision.[29] Therefore, it is difficult to geocode the unstructured information using traditional methods at the scale of more than 1.5 million artifacts. I geocode each location with a large-language-model (LLM) pipeline that reads each place name with its full parent names chain and returns standardized coordinates and a precision level.[30] A random audit of 100 geolocated artifacts finds 98 of the assigned coordinates within 50 km of the location implied by the raw location strings, with a median error of 1.0 km and mean of 5.5 km.[31] Panel A of Figure A.2 shows the geographical distribution of the artifacts in the sample.

[28]The database is publicly accessible at https://www.britishmuseum.org/collection. I carried out the scraping by walking through all possible geographical terms, and thus artifacts without any geographical information are excluded (which would not be able to enter my analysis anyway). The scrape is a snapshot taken in 2024. The British Museum at that time claimed 2 million records in their online catalog, against a total of 8 million records in the entire collection. The Museum explains that the online record is based on the British Museum's internal collection management tool, where they record what they know about the collection. Appendix B.1 details the procedure of scraping and processing the British Museum data.

[29]For example, "Summer Palace (Beijing)", "Rawalpindi (2 miles east of)", "India (historic—pre-1947) (North-west)".

[30]For each geographical term, the British Museum documents its "broader terms" and "narrower terms". For example, "Palkhor Chode" expands to "Asia; China; Tibet; Xigazê; Gyantse County; Gyantse (City); Gyantse Monastery; Palkhor Chode." I scraped the full hierarchy of broader and narrower names and was thus able to match every item into the hierarchical tree. The precision level records whether the geocoding based on natural language resolves to a city or village, a region, or a country. Appendix B.2 details the methodology and validation process. Section 4.3 shows robustness to restricting the sample by geocoding precision level and to using the production place instead of, or together with, the find spot.

[31]The two larger errors are rare sites that standard records might not contain, a mission station in Malawi placed 206 km south of its district and a desert ruin near Khotan placed 98 km off within the same prefecture. Appendix B.2 details the audit.

3.2 Battles and commanders

Full data. I digitize the *Dictionary of Battles and Sieges* (Jaques, 2007), a comprehensive work covering 8,401 battles and sieges from antiquity to the modern era.[32] Each entry provides a short textual narrative, typically 50 to 200 words, identifying the belligerents, the leaders of each belligerent, the location, the year, and the outcome. I extract structured fields from each battle narrative using an LLM pipeline and geocode battles by the same LLM pipeline as the artifacts. I define a British battle as an engagement in which a state-backed British force was a belligerent and fought.[33] I manually check each field for all 474 British battles used in the sample. Figure A.3 shows the dictionary's entry for the 1897 Benin expedition as an example. Panel B of Figure A.2 shows the geographical distribution of the British battles. Appendix B.3 details the data construction process and auditing results.

Commanders. I identify the commander of the British forces in each battle from the narratives in Jaques (2007). For each commander, I read biographical sources by hand to build a commander-battle level dataset.[34] I record: (i) dates of birth and death; (ii) highest rank attained; (iii) rank at the time of each battle;[35] (iv) honors and distinctions;[36] (v) family background, including noble or royal descent, father's military service history, and birthplace. This process yields 317 unique commanders who led British forces in at least one of the 474 battles from 1816–1913.[37] Appendix B.5 details the identification and biographical data-collection process.

[32]This work parallels the Historical Conflict Event Dataset (HCED) of Miller and Bakar (2023), which structures the same dictionary, with a specific focus on British battles. HCED records belligerents loosely and tags 502 engagements as British against my 474. The audit also corrects errors in the dictionary itself, especially in leader names and ranks. Appendix B.3 compares my battle file with HCED and lists the corrections to the Jaques (2007) data.

[33]Therefore, forces like "Indian Army" or "Cape Colonial Forces" are also detected and included. Cases where Britain did not fight (e.g., the Bombardment of Valparaíso, where British warships were present but never engaged, insisting on their neutrality), or where British military persons were privately hired (e.g., the Battle of the Acropolis, where Admiral Cochrane commanded Greek squadrons as a private hire) are excluded, though they are all tagged by Miller and Bakar (2023).

[34]Sources include the *Oxford Dictionary of National Biography*, *Encyclopædia Britannica*, Wikipedia and associated original sources, the National Army Museum, the Royal Museums Greenwich, and the Imperial War Museum. I also use genealogical databases including Ancestry, FindAGrave, and WikiTree to verify dates of birth and death.

[35]I use substantive ranks wherever possible, as this is the rank that governs pay, prize shares, and promotion eligibility. See Appendix B.4 for more discussion on officer ranks in the British military.

[36]For example, the grades of the Order of the Bath (GCB, KCB, CB). See Appendix B.4 for more details.

[37]That commanders are fewer than battles reflects repeat command. For instance, Sir Colin Campbell led fifteen battles in the sample period.

3.3 Probate records

Commanders' wealth at death. I trace the wealth at death of each battle commander through the probate calendars of England and Wales.[38] Figure A.4 shows a calendar page and the entry for Admiral Sir Harry Rawson. For each commander identified in Section 3.2, I search the calendars by hand and match him to his entry. For Scottish and Irish leaders who did not appear in the calendars, I supplement with respective Scottish and Irish sources.[39] Among the 245 commanders who died within the probate coverage window, I am able to match 218 of them.[40] I read every matched value from the original entry and convert it to constant 1900 pounds using the UK Retail Prices Index from the Office for National Statistics.

Other military officers. I also digitize the calendars in full to extract the wealth at death of military officers who never led a battle. Similar to Cummins (2021), I scrape all 16.1 million grants of probate and administration in the calendars with an LLM-based optical character recognition (OCR) model, and extract the fields of each entry using LLM extraction to obtain the name, year of death, value of the estate, and occupation of the deceased.[41] From the occupation field, I identify 13,556 military officers who died between 1858 and 1906 and did not lead a battle in the sample, together with their probate value and rank at death. Appendix B.6 describes the scraping, OCR, and extraction pipeline and

[38] From 1858, the Principal Probate Registry of England and Wales published an annual calendar listing every person who received a grant of probate or letters of administration. A grant was required only for estates above a minimum value, £10 until 1900 and £50 from 1901 to 1931 (Turner, 2010). About 10 percent of English decedents in the 1890s left an estate large enough to be probated (Cummins, 2021). The printed volumes for 1858–1996 survive as page images on the online probate search service of HM Courts and Tribunals Service (2025), `https://probatesearch.service.gov.uk`, released as Crown copyright public sector information under the Open Government Licence v3.0. For discussion of the source and a first effort to digitize the data, see Cummins (2021).

[39] National Records of Scotland (2026) indexes and images the resulting wills and testaments for 1513–1925 through ScotlandsPeople at `https://www.scotlandspeople.gov.uk`, and the printed *Calendar of Confirmations and Inventories*, digitized for 1876–1936, indexes the estates confirmed after the images end (Ancestry, 2015). Irish estates appear in the Calendars of Wills and Administrations of the Principal Registry in Dublin, which National Archives of Ireland (2026) publishes for 1858–1920 at `https://willcalendars.nationalarchives.ie`. Royal Irish Academy (2026) publishes the *Dictionary of Irish Biography* online at `https://www.dib.ie`.

[40] Of the 27 unmatched, 13 were colonial officers who lived and died overseas and were thus unlikely to leave estates in Britain, and for the other 14 I found no grant under their name after extensive search. Appendix B.7 gives further discussion on the unmatched persons. Section 5.1 bounds the results against selective missingness in the spirit of Lee (2009).

[41] The occupation field is present from 1858 to 1906. Cummins (2021) digitized the calendars for 1892–1992 from the same service. My coverage extends the start date to 1858 and extracts additional structured fields, including the places of residence and death, the registry and date of the grant, and the name, occupation, and relationship of the executor or administrator. Manual checks of 20 random calendar pages find that the extraction captures all records on the 20 pages (recall of 100 percent) and that the extracted estate value agrees within 10 percent of the printed sum for 98.1 percent of the 431 records checked.

reports the audit.

3.4 London Gazette

I use the *London Gazette* to document commission purchases and promotions.[42] I digitize all 27,737 issues from 1665 to 1914 with LLM-based OCR and a structured LLM extraction. The extraction returns one record per officer-movement event. Each record holds the officer's name, the ranks before and after, the regiment, the event type, whether the move was by purchase, the dates, and the officer replaced. Figure A.5 shows representative examples of promotion notices. Appendix B.8 documents the pipeline, every extracted field, and the accuracy checks. The extraction yields 102,368 promotion records in the window 1816–1870, which ends with the Cardwell reforms that abolished commission purchase in 1871. An audit on a random sample shows the extraction captures 98.5 percent of officer-career events gazetted (recall) and the purchase channel is correct in 99.9 percent of cases (Appendix B.8).[43]

The Gazette also records prize-money distributions. For the Army, I identify 24 prize funds with Gazette notices for wars fought between 1816 and 1913.[44] Table A.1 lists them together with the funds that the literature and the India Office records document. Appendix B.8 documents further details on prize money notices.

3.5 Other data

Auction catalogues. To document private sales of artifacts, I digitize Brill's *Art Sales Catalogues Online* scans using an LLM-based OCR workflow. I obtain 14.5 million distinct lot records from 27,751 catalogues covering 1750 to 1900.[45] I then flag a lot as a campaign object if its description or the catalogue as a whole states that it came from a British campaign. The reading yields 1,803 campaign lots. A language model reads each lot together with the title page and headings of its catalogue, which often state where the lots came from

[42]The Gazette is the official public-notice journal of the United Kingdom and has appeared continuously since 1665. By statute it carries every Crown commission and promotion, along with prize-money distributions, military honors, and Admiralty Court adjudications.

[43]In addition, among Army promotions that state a channel, 66 percent are by purchase, which matches the split reported by Bruce (1980).

[44]For the Navy, I obtain 7,627 notices of distributions, head money, and bounties for 1816–1914, covering 4,875 captures. They state the sum paid to a share class, not the value of the fund.

[45]Frits Lugt's *Répertoire des catalogues de ventes publiques* (Lugt, 1938) is the standard bibliography of printed sale catalogues and lists the surviving catalogues of auctions held across Europe from 1600 to 1925 and provenance research has rested on it since (Hugenholtz, 2004). For 1750 to 1900, Brill's index lists 57,436 of Lugt's sales and holds a scanned copy for 27,870 of them, roughly half, drawn from the Netherlands Institute for Art History and other European libraries, which makes it the most comprehensive scanned collection of historical auction records according to Brill. I obtained 27,751 of these 27,870 sales, and the remainder could not be accessed due to Brill's server problems. Appendix B.10 measures its coverage of the London auction houses against the union catalogue of research-library holdings.

(Appendix B.10). For painting-specific lots, I supplement them with the sales records of the Getty Provenance Index.[46] Appendix B.10 documents in more detail the digitization of auction data.

Cliopatria. To measure British territorial control, I use the Cliopatria geospatial polity database (Bennett et al., 2025), which supplies the boundaries of the world's polities in each year. A city-year is under British rule when the city's coordinates fall inside a British polygon in that year.[47]

Military institutions and technology. I use the V-Dem indicator of military professionalization, which records whether armed-forces personnel are salaried from state coffers (Coppedge et al., 2026), and the technology-adoption index of Comin et al. (2010) measured in 1500 AD.[48] Appendix B.12 describes their construction and coverage.

Alternative battle source and codings. For alternative data of British battles, I use Wikidata, whose 3,204 battle items for 1816–1913 include 195 with a British participant. I also compare my digitization and coding of British battles against HCED (Miller and Bakar, 2023), which uses the same underlying source as I do. Appendix B.3 shows the details.

3.6 Panel construction and summary statistics

To identify artifact inflows as responses to specific battles, I need fine spatial granularity. However, historical administrative boundaries are poorly standardized across countries and time periods, making it difficult to define a globally consistent set of subnational regions for the nineteenth-century world. I therefore adopt two complementary spatial aggregation strategies. The first uses the Natural Earth populated-places dataset (10m resolution), which provides coordinates, names, populations, and country codes for 7,342 cities and towns worldwide.[49] I match each artifact and each battle to the nearest populated place

[46] The Getty Provenance Index indexes the same Lugt-listed catalogues and records each sale's Lugt number, and further transcribes each indexed lot into separate fields for artist, title, dimensions, seller, buyer, and price, so its records provide more extracted fields. Its coverage is narrower in both period and object type. It indexes paintings, drawings, sculpture, and miniatures and omits the other lots in the same catalogues. Its European sale catalogues stop at about 1850. For 1750 to 1900 it holds 899,763 records from 10,573 catalogues, and only 9,645 of those records date after 1840, against the 27,751 catalogues of the scanned corpus.

[47] I use an LLM to flag suspicious assignments, and check the flagged city-years by hand against the dates of annexation and occupation in the historical record. Appendix B.11 lists every correction.

[48] The professionalization measure carries a value for 112 countries over 1800–1900, 34 of them with British battles. The technology-adoption index covers 115 countries in the panel and 31 with British battles.

[49] Natural Earth is a public-domain dataset available at `https://www.naturalearthdata.com/`. I use the 10m-resolution populated-places layer. According to Natural Earth, they favor regional significance over population census in determining the selection of places. The layer is present-day rather than a census of places that existed during 1816–1913. The grid panel, whose cells are drawn without reference to any settlement, is the check on this choice.

by distance. The second partitions the globe into $1^\circ \times 1^\circ$ latitude–longitude grid cells and assigns each artifact and battle to the cell containing its coordinates. The city-level panel provides consistent administrative boundaries and basic information on the cities, and the grid-cell panel provides a more neutral unit of aggregation and avoids problems arising from changes in administrative borders. The unit of observation in the regressions is therefore the city-year, or the grid-cell-year in the alternative panel, and the outcome is the number of artifacts from that unit that the Museum acquired in that year. Appendix B.13 details the aggregation procedure.

For the main analysis of artifact inflow patterns following British battles, I restrict both the year of battle and the year of acquisition to be in the range 1816–1913,[50] exclude artifacts found in the United Kingdom or Ireland, and drop artifacts whose production date postdates 1913. These restrictions leave 139,657 artifacts. Cities with either any artifact or any battle are included in the main regression sample. For the long-run analysis, I extend the panel to 1750–2024, covering 367,836 artifacts. Appendix B.13 details the panel construction and the sample restrictions.

Table 1 describes the datasets. Before 1816, the British Museum acquired relatively few artifacts. From 1816, acquisitions accelerate sharply, and international material makes up roughly three-quarters of what the British Museum acquired during 1816–1913. In the main sample, the Museum acquired most artifacts through donation and purchase. Asia contributes the largest geographic share (35 percent), followed by Africa (28 percent). Two-thirds of the artifacts are geolocated at the city or village level. The Jaques dictionary yields 474 British battles during 1816–1913, concentrated in Asia (51 percent) and Africa (34 percent), and 365 (77 percent) resulted in British victories.

Table A.2 reports summary statistics for the estimation samples. Panel A covers the city-year and grid-cell-year panels used in the main regressions. The mean artifact count per city-year is very small, reflecting the extreme sparsity of acquisition events, and British battles are similarly rare. Panel B covers the person-level probate sample of linked battle leaders who died after 1858, and Panel C the regiment-year panel of Gazette officer-career events underlying the commission-purchase analysis of Section 5.2.

[50] The window is bounded by institutions on both sides. The Museum's collection only begins its steady growth in the nineteenth century, and the Napoleonic Wars at one end and the First World War at the other, mass continental conflicts rather than British imperial expeditions, would dominate the battle data. The endpoint also follows the Hague Conventions of 1899 and 1907, which placed the first international restrictions on wartime seizure.

Table 1: Data Description

1. Artifacts

	All	Year and location	Find spot, pre-1914	Long-run sample	Main sample
Number of Artifacts	1,532,147	1,218,797	496,231	367,836	139,657

Yearly Acquisitions	1753–1815	1816–1913	1914–2024
UK & Ireland	101.9	1,239.2	1,765.2
Rest of the World	238.9	3,819.1	5,237.8

Among artifacts in the main sample

Acquisition Method	Donations	Purchases	Others	Unrecorded
	63,678 (45.6%)	42,300 (30.3%)	20,179 (14.4%)	13,500 (9.7%)

Find-spot Precision	City or village	State/province	Country or broader
	91,767 (65.7%)	17,434 (12.5%)	30,456 (21.8%)

Location	Asia	Africa	Europe	Americas	Oceania
	48,766 (34.9%)	39,614 (28.4%)	24,438 (17.5%)	14,638 (10.5%)	12,201 (8.7%)

2. Battles

Dataset coverage	All Battles	Battles 1816–1913	British battles 1816–1913
	8,401	2,118	474

Among British battles between 1816 and 1913

Location	Asia	Africa	Europe	Americas	Oceania
	240 (50.6%)	160 (33.8%)	25 (5.3%)	6 (1.3%)	43 (9.1%)

Battle outcomes	British won	British lost or tied
	365 (77.0%)	109 (23.0%)

3. Probate Records

Record counts	Total probate records	Years covered	Military officers
	16,149,806	1858–1996	13,556

4. Battle Leaders

Leader coverage	Total battle leaders	Within probate coverage	Matched to probate
	317	245	218

5. Rank Purchasing

Selected channels	By Purchase	Without Purchase	By Seniority	By Brevet
	24,070	12,431	287	2,315

Note: This table describes the main data sets used in this paper. The artifact columns apply successive restrictions, from all artifacts to those with an acquisition year and a location, then to find spots outside the UK and Ireland, and finally to acquisitions in 1816–1913. Locations use the find spot where one is recorded and the production place otherwise, and parentheses report row percentages. *Others* covers bequests, transfers, exchanges, shares of excavated finds, and treasure trove, and *Unrecorded* means the record names no acquisition source. *Military officers* counts officers who died in 1858–1906 without leading a battle, *within probate coverage* counts leaders whose death year falls inside the probate sources, and the promotion counts cover *London Gazette* officer events over 1816–1870.

4 Artifacts

4.1 Empirical strategy

Baseline specification. The main specification links British battles to subsequent artifact inflows from the battle location to the British Museum. I estimate the effect of British military engagements on artifact inflows using a Poisson pseudo-maximum-likelihood (PPML) model with two-way fixed effects:[51]

$$E[y_{it} \mid BritishBattle_{i,t-1}, W_{it}, \alpha_i, \lambda_t] = \exp\left(\beta\, BritishBattle_{i,t-1} + \alpha_i + \lambda_t + W_{it}'\gamma\right), \qquad (1)$$

where y_{it} is the count of artifacts from city i acquired by the British Museum in year t; $BritishBattle_{i,t-1}$ is an indicator for a battle involving British forces in city or grid cell i in year $t-1$; α_i is a city fixed effect; λ_t is a year fixed effect; and W_{it} is a vector of additional controls used in extended specifications. Standard errors are clustered at the state/province level for the city specification and at the grid-cell level for the $1^\circ \times 1^\circ$ grid specification.

The coefficient of interest β gives the multiplicative change in expected artifact inflows in the year after a British battle, relative to non-battle years in the same city. City fixed effects absorb time-invariant differences across locations, such as a local stock of antiquities and proximity to trade routes. Year fixed effects absorb Museum-wide shocks in a year, such as changes in its acquisition budget. Extended specifications add country-by-year effects and trends by city size and spatial block.

My hypothesis is that $\beta > 0$. If British forces systematically took objects during military campaigns and disposed of them through on-site auctions, direct sales, or official transfers, the Museum's acquisitions from those places should rise in the following year. However, there are several reasons why the effect could be zero. Looting might have been rare, with the famous cases accounting for most wartime taking. Soldiers and officers might have taken objects primarily as personal trophies and kept them in private hands, and these objects might reach the Museum only much later, if at all. Even with explicit wartime taking,

[51] Unlike linear models using log or inverse hyperbolic sine transformations of the dependent variable, PPML estimates correct marginal effects for skewed nonnegative count outcomes with a large probability mass at zero (Mullahy and Norton, 2024). Moreover, Chen and Roth (2024) show that treatment effects for such transformations are arbitrarily sensitive to the units of the outcome when the treatment affects the extensive margin. PPML is also consistent for the conditional mean whatever the true distribution of the count, so the mass at zero costs efficiency rather than consistency (Gourieroux et al., 1984; Santos Silva and Tenreyro, 2006). I nevertheless report least-squares estimates in levels, in logs, and in inverse hyperbolic sines, and negative-binomial estimates, as robustness in Section 4.3. Because equation (1) is a two-way fixed-effects difference-in-differences with staggered timing, Section 4.3 adds two designs that restrict the comparisons the recurring battle treatment permits, a stacked construction that re-estimates the Poisson model on clean sub-experiments (Cengiz et al., 2019), and the local-projections difference-in-differences estimator of Dube et al. (2025) estimated on the inverse hyperbolic sine of the count.

if troops sold battle-related objects only through dealers, collectors, and auction houses, those objects could still take several years to reach the Museum, producing little immediate increase in acquisitions.

A causal interpretation of the results assumes that the precise timing of battles within a given location was shaped primarily by military and geopolitical considerations (the need to suppress a revolt, to mount a punitive expedition, to secure a trade route, or to pre-empt a rival power) rather than by the British Museum's collecting agenda. It also assumes that the year-to-year timing of military engagements conditional on location is plausibly exogenous to idiosyncratic shocks in Museum acquisitions from that location. Section 4.4 discusses the main threats to identification and the tests to address them.

Event-study analysis. If battles caused artifact inflows, acquisitions should show no differential trend before a battle but a positive response after it. To examine the immediate effect of battles on artifact acquisitions and test for differential pre-trends, I focus on the very short run around battles and estimate:

$$E[y_{it} \mid B_i, \alpha_i, \lambda_t] = \exp\left(\sum_{\substack{k=-3 \\ k\neq -1}}^{3} \beta_k \cdot \mathbf{1}[\,t - k \in B_i\,] + \alpha_i + \lambda_t\right), \tag{2}$$

where B_i denotes the set of years with a battle involving British forces in city or grid cell i, so that $\mathbf{1}[t-k \in B_i]$ marks a battle k years before year t. The year before a battle, $k=-1$, is the omitted reference period.[52]

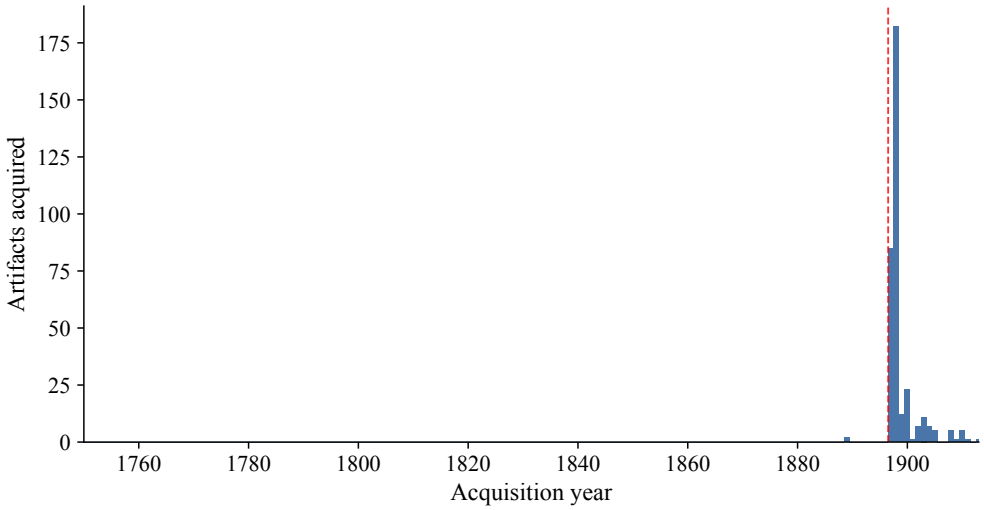
A motivating case study: Benin City, 1897. Figure 1 plots the annual British Museum acquisition history of artifacts from Benin City. Before the 1897 punitive military expedition, the Museum acquired almost nothing from Benin City. Immediately after the battle, acquisitions spiked as objects seized by the military were transferred to the Museum at once, followed by a long tail of further accessions as private holdings surfaced through the market. Figure A.6 shows further case studies.

4.2 Main results

Table 2 presents the baseline estimates of equation (1). The coefficient on a British-involved battle in the previous year is positive, significant at the one-percent level, and stable across

[52]The treatment indicator $\mathbf{1}[t-k \in B_i]$ is non-absorbing: it is defined relative to each battle and returns to zero once the event window passes. Each unit of observation can have multiple treatments. Section 4.3 shows that the event-study pattern holds under a stacked difference-in-differences design that re-estimates the Poisson model on clean comparisons, and under the local-projections difference-in-differences estimator, which keeps the recurring treatment and compares each battle only with units not treated within its window. Appendix B.15 discusses the stacked design in detail.

Figure 1: Benin City (Nigeria): British Museum Artifact Acquisitions, 1750–1913



Note: Annual count of British Museum artifacts from Benin City, Nigeria. The red dashed line marks the 1897 British Punitive Expedition. Of the 348 Benin City artifacts in the 1750–1913 Museum catalog, 168 are brass plaques acquired in 1898 whose records explicitly describe them as loot.

specifications. The city-level point estimates range from 2.128 to 2.833, suggesting a roughly eight- to seventeen-fold increase. In the baseline city specification, a British battle raises expected artifact inflows in the following year by a factor of $\exp(2.150) \approx 8.6$ relative to non-battle city-years. Applied to the city-year mean of 0.70, this multiplier corresponds to an increase to roughly 6 artifacts in the year after the battle. The estimates are similar, if not stronger, with country-by-year fixed effects and population- and area-decile-by-year fixed effects; at the grid level they survive 10°-block-by-year fixed effects, alone and combined with cell-population- and settlement-count-decile-by-year effects. Section 4.4.1 discusses in detail what each set of fixed effects absorbs and how they address the concern that acquisition trends unrelated to the fighting coincided with the timing of battles.

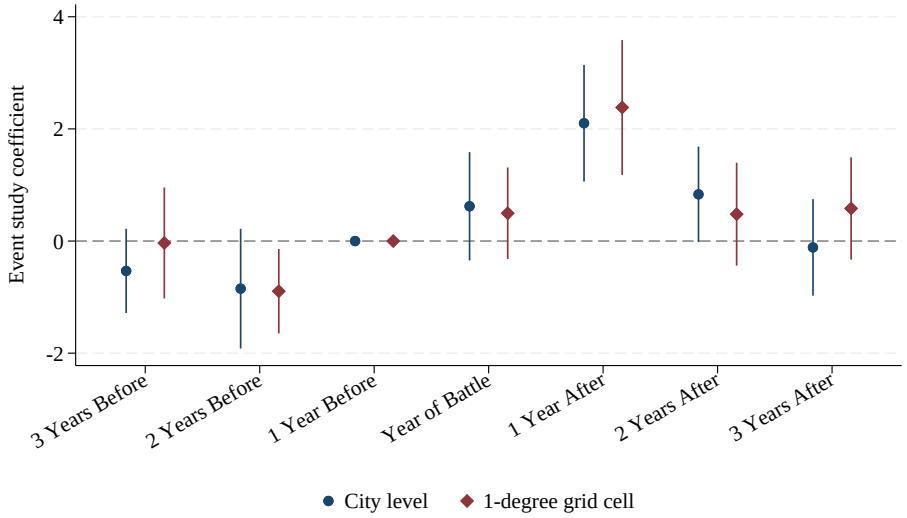
Short-run dynamics. Figure 2 reports the short-run event-study estimates from equation (2). The pre-battle coefficients are small and statistically indistinguishable from zero, suggesting that battle locations were not already on differential acquisition trends before the engagement. The coefficient for the year immediately after a battle is positive and significant, with the battle year itself and the second year after showing smaller, positive coefficients. This timing is consistent with a direct post-conflict acquisition channel. The short window leaves out later arrivals through private collections, estate auctions, regimental transfers, and other slower channels, so the coefficients are likely to be underestimates.

Table 2: British Battles and Acquisitions by the British Museum

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***	2.128***	2.833***	2.413***	2.464***	3.260***
	(0.534)	(0.378)	(0.342)	(0.605)	(0.777)	(0.574)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	–	–	Yes	–	–
Country × Year FE	No	Yes	Yes	–	–	–
Pop./Area Decile × Year FE	No	No	Yes	–	–	–
10° Block × Year FE	–	–	–	No	Yes	Yes
Cell Pop./Settlement Decile × Year FE	–	–	–	No	No	Yes
Number of Observations	198,450	198,450	198,450	213,248	213,248	213,248
Mean of dep. var.	0.704	0.704	0.704	0.655	0.655	0.655
SD of dep. var.	18.460	18.460	18.460	17.778	17.778	17.778

Note: The unit of observation is a city/grid-year. The dependent variable is the count of artifacts acquired by the British Museum. Treatment is a binary indicator for whether a British battle occurred in the previous year. The 10° Block × Year fixed effects of columns 5 and 6 compare each grid cell only to cells in the same 10° × 10° neighborhood in the same year, the grid analog of the city specifications' country-by-year effects; column 6 additionally includes cell-population- and settlement-count-decile-by-year effects, the grid analog of the city population and area deciles, built from the same populated-places layer. The block-by-year specifications are identified from the roughly 75,000 cell-years with within-neighborhood outcome variation; the displayed observation counts follow the filtered-sample convention of the other columns. A dash marks a fixed effect that does not apply to that column, either because the panel is the other one or because a finer interacted effect already absorbs it. Standard errors are clustered at the state/province level (city specifications) or grid level (grid specifications) and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Figure 2: British Battles and Artifact Acquisitions: Event Study



Note: The figure reports PPML event-study coefficients for years relative to a British battle; year −1 is omitted. The city and 1°-grid specifications include unit and year fixed effects. Standard errors are clustered by state/province for cities and by grid cell for grids; 95% confidence intervals are reported.

4.3 Robustness

Comparisons under recurring treatment. A two-way fixed-effects regression with staggered timing uses previously treated units as controls for newly treated ones, and if those units are still experiencing lagged effects of their own treatment, these comparisons bias the estimate (Goodman-Bacon, 2021; Borusyak et al., 2024; Dube et al., 2025). The concern applies here because a city fought over a few years earlier could still be sending objects from that battle to the Museum. While most comparison observations had no recent British battle,[53] I address the concern with two designs that compare each battle only with cities that had no battle in the surrounding years.

First, I re-estimate the PPML model using a stacked difference-in-differences construction (Cengiz et al., 2019), which builds a separate sub-experiment around each battle episode. Appendix B.15 details the construction and sample restrictions. Second, I use the local-projections difference-in-differences estimator of Dube et al. (2025), which accommodates recurring treatment and selects clean comparisons for each horizon. The outcome is the inverse hyperbolic sine of the artifact count.[54]

Table 3 reports the results. Columns 1 and 4 reproduce the baseline PPML estimates for cities and grid cells. The stacked estimates in columns 2 and 5 are larger and remain statistically significant. The local-projections estimates in columns 3 and 6 also show a positive and statistically significant increase in acquisitions in the following year. Neither approach shows evidence of differential pre-battle trends (Figure A.7). These results suggest that comparisons with recently treated units do not drive the positive baseline effect.

Functional form. One concern is whether the estimates depend on the Poisson estimator or on the functional form. Estimating the baseline by least squares in levels, in logs of the positive counts, and in inverse hyperbolic sines, or by a negative binomial with the same fixed effects, gives positive coefficients throughout (Table A.3). The effects also hold on the extensive margin: using an any-acquisition indicator, a previous-year British battle raises the probability of any acquisition by 4.1 percentage points on a mean of 4.6 percent, roughly a doubling effect, with a flat pre-trend in the event study (Table A.4; Figure A.8).

Alternative outcomes. The results are robust to different geolocation criteria or subsets of artifacts. Spreading imprecisely located artifacts across their country or state in proportion

[53] For each battle event, I calculate the share of comparison cities that experienced a battle in the preceding year. This share averages 0.14% in the city-level baseline regression. In the city-level event study, the corresponding share for the three years before each battle averages 0.37%.

[54] Other estimators for staggered timing do not fit the short-run setting. The estimators of Sun and Abraham (2021) and Borusyak et al. (2024) assume that a unit stays treated after its first treatment, while 73 of the 219 battle cities saw British fighting in more than one year. The estimator of de Chaisemartin and D'Haultfœuille (2026) allows treatment to switch off, but it measures effects from a city's first battle.

Table 3: British Battles and Artifact Acquisitions: Stacked and Local-Projection Estimates

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***	2.694***	0.245***	2.413***	3.220***	0.204***
	(0.534)	(0.789)	(0.088)	(0.605)	(0.837)	(0.078)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
Estimation	PPML	PPML (Stacked)	LP–DiD (asinh)	PPML	PPML (Stacked)	LP–DiD (asinh)
City or Grid FE	Yes	Yes	Differenced	Yes	Yes	Differenced
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
FE × Stack	No	Yes	No	No	Yes	No
Number of Observations	198,450	935,935	180,937	213,248	1,006,096	198,509
Mean of dep. var.	0.704	0.697	0.091	0.655	0.638	0.087
SD of dep. var.	18.460	19.496	0.501	17.778	18.549	0.485

Note: The unit of observation is a city-year in columns 1–3 and a 1° × 1° grid-cell-year in columns 4–6. The dependent variable is the count of artifacts acquired by the British Museum in columns 1–2 and 4–5 and its inverse hyperbolic sine transformation in columns 3 and 6. Each coefficient measures the response one year after a British battle. Columns 1 and 4 reproduce the baseline Poisson pseudo-maximum-likelihood estimates of Table 2. Columns 2 and 5 report the one-year-after coefficient from the recurring battle-episode stack described in Appendix B.15. Each stack contains a clean treated episode and units with no British battle from six years before through three years after the focal battle. The model interacts the unit and year fixed effects with the stack. Columns 3 and 6 use the local-projections difference-in-differences estimator of Dube et al. (2025). The estimator treats each battle as a one-period, non-absorbing shock and permits repeated shocks within a unit. It restricts each horizon to units entering treatment and clean controls, assumes that effects stabilize after five years, and uses a three-year pre- and post-window. The estimator differences out unit effects and includes year fixed effects, as the fixed-effect rows indicate. A unit can serve in several stacks, so the stacked columns count its separate appearances. The LP-DiD observation counts refer to the one-year-after comparison. The reported means and standard deviations for those columns describe the full input panel. I cluster standard errors at the state/province level in the city specifications and at the grid-cell level in the grid specifications. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

to precisely located inflows, keeping only the two-thirds geolocated at city or village precision, or assigning artifacts without a find spot to their production place all give positive and significant estimates (Table A.5; Figure A.9). The effect is not driven by trivial artifacts. Restricting the outcome variable to the six percent of artifacts that the British Museum has ever exhibited as a proxy for importance,[55] the coefficients are larger than the baseline at both the city and the grid level (Table A.6, columns 2 and 5; Figure A.10, Panel A). Nor are the results driven by personal donations.[56] Removing artifacts that private individuals

[55]Appendix B.14 details how I parse the exhibition-history field.

[56]If looting was pride-driven rather than financially driven, officers would be more likely to give what they took to the Museum as donations. In reality, even a donation could have financial implications. The 1894 Finance Act brought works of art into the taxable estate, and its section 15(2) exempted objects given or bequeathed to national institutions, including the British Museum, so a gift could shelter an estate from duty.

donated to the British Museum barely moves the coefficients under the baseline fixed effects, suggesting that the result is not driven by personal donations alone (Table A.6, columns 3 and 6; Figure A.10, Panel B).

Alternative treatments. The results are robust to alternative sources of British battles. Restricting the treatment to the 439 engagements fought by the regular British Army, Royal Navy, or Royal Marines leaves results similar to the baseline (Table A.7). Widening the definition to the looser participant coding of Miller and Bakar (2023), which counts any British-related engagement and adds the cases where British forces were present but did not fight or where British officers served as private hires, which Section 3.2 excludes, gives similar effects. Replacing the battle source altogether with the battle-typed Wikidata items that carry a British-participant statement, an independently compiled source, also yields positive and significant results (Table A.7; Figure A.11). The results are also robust to how multi-year engagements are dated. Assigning each battle to its start year, end year, or a random year of its span leaves the coefficients unchanged (Table A.8; Figure A.12).

Outliers. Since in the majority of city-years the Museum made zero acquisitions from a given city, a few very large accessions or places could also drive the estimates. Table A.9 addresses this concern. The coefficients stay positive and significant when the outcome is winsorized or trimmed at the 99th percentile, or top-coded at 10, 50, or 100 artifacts (Panels A and B; Figure A.13), and when the top artifact cities, the top battle cities, or any one of the 194 sample countries is dropped (Panels C to E).

Sample, spatial spillovers, and inference. The results could also depend on which cities and years enter the panel, on the event window, and on the spatial unit. Table A.10 varies each in turn. While the main sample contains cities with either battles or artifacts, the estimates are similar on all populated cities, on battle-only or artifact-only cities, and on their intersection (Table A.10, Panel A; Figure A.14). Estimates are also similar on cities documented as existing by 1900 or 1815 (Table A.10, Panel B), and on the panel extended back to the Museum's 1753 founding, which adds the Seven Years' War, the American Revolution, and the French Revolutionary and Napoleonic wars (Table A.10, Panel C; Figure A.15). Extending the event window to ± 5 years also leaves the pattern similar (Figure A.16). Aggregating to state or province units and to 2° and 5° cells, which folds neighbors with potential spillovers into the treated unit, lowers the coefficients but leaves them positive and significant (Table A.10, Panel D; Figure A.17). Conley (1999) standard errors allowing spatial correlation up to 1,000 kilometers also leave both the city and the grid estimates significant (Table A.10, Panels E and F; Figure A.18).

4.4 Threats to identification

The main empirical concern in this part of the analysis is that the Museum's acquisitions from a place rose around a battle for reasons unrelated to the fighting.[57] If an unobserved shock raised both the likelihood of a battle and subsequent acquisitions from the same city, the causal interpretation of the estimates would be problematic. Such a shock would have moved objects even had Britain not fought: growing trade through a city could raise sales of local objects to British buyers while making a battle over commercial access more likely, or a revolt or the collapse of a ruling house could throw a court's treasures onto the market in the same year that it drew in British forces. I undertake three sets of exercises to rule out this concern empirically. The controls for common trends in Section 4.4.1 address a shock already at work before the battle year, the incident-triggered battles of Section 4.4.2 address a shock that arrived with the battle, and the falsification tests of Section 4.4.3 test whether the rise is specific to British battles, and so inconsistent with any shock common to warfare or turmoil in general, or with chance.

4.4.1 Accounting for common trends

The baseline specifications in columns 1 and 4 of Table 2 include location and year fixed effects. Location fixed effects absorb persistent differences in acquisitions across places, such as a rich local stock of antiquities that drew both collectors and British forces. Year fixed effects absorb changes in collecting shared across all places, such as a change in the Museum's yearly budget. A further concern is a trend confined to one place, such as a port whose trade with Britain grew year by year or a place in turmoil whose objects were already coming onto the market when Britain struck. Such a trend would raise acquisitions in the years before a battle as well as after it. The flat pre-battle coefficients in Figure 2 suggest that battle locations were not on such a trend before the fighting. Adding a separate linear trend for every city or grid cell leaves the battle coefficients positive and significant, and the event-study pattern is similar (Table A.11; Figure A.19). The same holds with the regression reversed. Acquisitions from a place in the previous year, or in any of the previous three years, do not predict a British battle there (Table A.12).

A trend can also be shared by some places but not others, such as growing British interest in one region or a concentration of collecting in larger cities, and such a change could raise both acquisitions and the likelihood of a battle where it occurred. If so, the battle coefficients should fall once trends are allowed to differ across areas and size groups. Columns 2 and 5 of

[57] The concern only applies to the set of acquisition shocks truly unrelated to the battles. Acquisitions through auctions or excavations, for instance, can also result from battles. Section 2.1 discusses how prize agents auctioned loot after battles and how British occupation opened access for British excavation in Egypt after 1882. When fighting enables these activities, acquisitions through them still form part of its effect.

Table 2 allow acquisition trends to vary across geographic areas. Country-by-year fixed effects absorb national changes in trade, political access, and collecting interest, and 10°-block-by-year fixed effects absorb changes shared by grid cells in the same neighborhood. Columns 3 and 6 of Table 2 in addition allow trends to differ by location size. City-population- and area-decile-by-year fixed effects, and their grid analogs, absorb changes shared by similarly sized places. The coefficients all remain close to the baseline if not larger. Figures A.20 and A.21 apply the same fixed effects to the city and grid event studies. Both show a positive and significant increase in acquisitions in the following year, and no pre-battle coefficient is significant at the 5% level.

4.4.2 Battles triggered by anti-British incidents

The flat pre-battle coefficients of Section 4.4.1 rule out a place-specific, time-varying condition that was already moving objects before the battle year. Another type is one that coincided with the battle and moved objects from the battle's location to the Museum only from that year on, which the trend controls cannot absorb. The identifying assumption is that, conditional on the fixed effects, the timing of a battle within a place was unrelated to the acquisitions the Museum would otherwise have made from it, not that battles were random. If Britain struck places in the year that an unrelated event sent their objects onto the market, the estimates would credit the battle with objects that would have arrived without it. For instance, Britain could have chosen to strike in the year a ruler fell, when his court's objects were dispersing, so that the Museum would have acquired those objects even without the battle.

To address this concern, I identify a subset of battles whose timing was plausibly determined by the other side rather than by Britain. I screen all British battles and find 34 "incident-triggered" battles, those set off by a prior anti-British incident such as the killing of an envoy, a massacre at a Residency, a repudiated treaty, or the seizure of British shipping, based on historical records. Appendix B.3 describes the coding and Appendix B.17 lists the incident-triggered battles. I then re-estimate the effect for the incident-triggered battles.[58] Table A.13 shows the results. The coefficients for incident-triggered battles are positive and significant in every specification. Therefore, even when the timing of a battle followed an incident rather than British discretion, acquisitions from the battle location rose sharply in the following year.

[58] An event study for this subset is uninformative. All but one of the 28 city-years with an incident-triggered battle record zero artifacts in the three years before the battle, so pre-battle coefficients would be identified from a single city.

4.4.3 Falsification

If the baseline reflected warfare or turmoil in general rather than British military access, battles that did not involve Britain or battles Britain lost should show similar effects. Table 4, columns 2 and 5 show that replacing the British-battle treatment with non-British battles yields negative and at most marginally significant coefficients, consistent with fighting disrupting trade and travel without giving British forces access to captured objects. Columns 3 and 6 enter British victories and British defeats in one regression. Victories carry the whole effect, with coefficients close to the baseline, while defeats yield negative coefficients that are marginally significant at the city level and insignificant at the grid level, and the two differ at the 1 percent level. In Table A.14, I show that civil-war battles[59] and battles fought by another colonial power, France, without British participation also produce negative coefficients. These placebos suggest that the acquisition increase depends on British military access specifically and does not reflect a mechanical increase in collecting around warfare, such as artifact displacement after any battle.

The baseline could also arise if a few battles happened to coincide with unusually large acquisitions. If these coincidences explain the result, the baseline estimate should sit inside the distribution of estimates from randomly reassigned battles. I therefore keep each battle's location fixed while reassigning its year, and then keep its year fixed while reassigning its location, all among the actual battle cities and years. The estimates from the reassigned battles form a roughly normal distribution with a median slightly below zero, at -0.24 when years are reassigned and -0.27 when locations are reassigned. By comparison, the baseline coefficient of 2.15 exceeds all 1,000 estimates under each procedure (Figure A.22). These results suggest an explanation based on chance coincidence is unlikely.

4.5 Long-run dynamics

While the short-run window measures the most immediate inflow, as Section 2.1 documents, more artifacts could arrive from battle cities over much longer horizons. The short-run results capture the objects that the forces disposed of within a year or two of the fighting, mostly through prize auctions and government transfers, while the long-run results capture the objects that officers kept and that reached the Museum through dealers, salerooms, and estates decades later. Figure A.23 shows this point descriptively by comparing the inverse hyperbolic sine of decade artifact counts between battle cities, in the five decades around their first battle, and cities with no British battle in the same calendar decades in the countries where Britain fought. Battle cities roughly follow the same trend before the battle, but stay above them for the five decades after it.

[59] Appendix B.3 discusses the construction and definition of civil-war battles.

Table 4: Placebo Tests

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***			2.413***		
	(0.534)			(0.605)		
Previous Year Had Non-British Battle		-0.864*			-0.532	
		(0.467)			(0.389)	
Previous Year Had British Battle Won			2.180***			2.454***
			(0.544)			(0.609)
Previous Year Had British Battle Lost			-1.877*			-1.322
			(1.097)			(0.868)
p-value: won = lost			0.001			0.000
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	198,450	198,450	198,450	213,248	213,248	213,248
Mean of dep. var.	0.704	0.704	0.704	0.655	0.655	0.655
SD of dep. var.	18.460	18.460	18.460	17.778	17.778	17.778

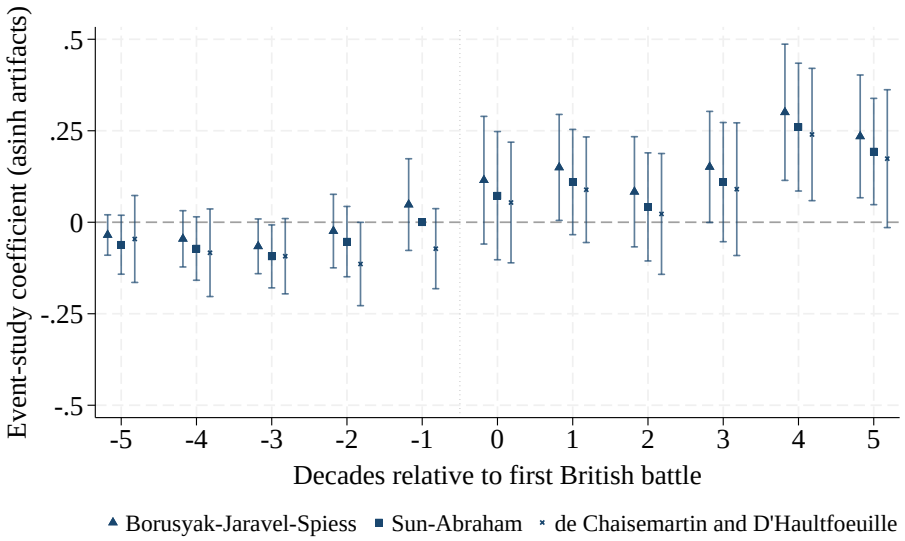
Note: The unit of observation is a city-year in columns 1–3 and a $1° \times 1°$ grid-cell-year in columns 4–6. Each column estimates PPML of the artifact count on the indicated previous-year treatment indicators, with unit and year fixed effects and errors clustered at the state/province level in the city columns and at the grid-cell level in the grid columns. The regression sample is restricted to units that ever experienced a British battle or artifact acquisition. Columns 1 and 4 report the baseline previous-year British-battle coefficient. Columns 2 and 5 replace the British-battle treatment with battles involving any non-British power (excluding any British co-involvement), additionally requiring that the unit hosted no British battle in the same year, so that allied engagements in shared theaters (British and French forces in the Crimea) are not counted as placebo events. Columns 3 and 6 enter two indicators in one regression, a previous-year British victory and a previous-year British defeat (a recorded defeat with no accompanying victory in the same year), and report the p-value of their equality. Companion placebos splitting the non-British pool into civil-war and French-only battles are reported in Table A.14. Of the 91 battles Britain lost, 77 fall inside wars Britain went on to win. Only 41 city-years and 41 grid-cell-years follow a defeat without a victory, and the Museum acquired an artifact in one and two of them. Figure A.22 reports falsifications that randomly reassign battles within the observed battle years or within the observed battle-hosting cities. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

I therefore test this pattern using a staggered difference-in-differences design at the decade level, treating a city's first British battle during the analysis window as the absorbing treatment.[60] On a 1750–2024 decade-level panel, I estimate

$$\tilde{y}_{id} = \sum_{h=-5}^{+5} \theta_h \cdot \mathbf{1}[d - g_i = h] + \alpha_i + \lambda_d + \varepsilon_{id}, \tag{3}$$

[60]The long-run question at the decade level is more suitable for an absorbing treatment specification, because once British forces have fought in a city, its objects can keep arriving for decades through private possession, inheritance, and the secondary market, whether or not Britain fights there again. Therefore, I treat a city as exposed from that decade onward. Later battles in the same city fall inside the exposed period and do not reset the clock. The baseline specifications (Equations (1) and (2)), on the other hand, treat each battle as an event and measure the response in the years around it.

Figure 3: Long-Run Artifact Acquisitions after a City's First British Battle



Note: Staggered event study of equation (3). The outcome is the inverse hyperbolic sine of the decade-level count of British Museum artifacts from each city. Each city's clock is anchored at the decade of its *first* British battle during 1816–1913; cities with no British battle in that window serve as never-treated controls. Three estimators are plotted side by side: the imputation estimator of Borusyak et al. (2024) (BJS), the interaction-weighted estimator of Sun and Abraham (2021) (SA), and the placebo-and-effects estimator of de Chaisemartin and D'Haultfœuille (2026) (dCDH). The x-axis denotes decades relative to the first battle ($h = 0$ is the decade containing the first battle); $h = -1$ is the omitted reference period. Error bars show 95% confidence intervals. Standard errors are clustered at the state/province level.

using the latest staggered two-way fixed-effect methods,[61] where d indexes calendar decade, g_i is the decade of city i's first British battle during 1816–1913, $\tilde{y}_{id} = \text{asinh}(y_{id})$ is the inverse hyperbolic sine of the decade-level artifact count, α_i is a city fixed effect, and the decade effects λ_d absorb the common growth in the Museum's intake. Figure 3 plots the results. All three show flat pre-trends and positive post-treatment coefficients that persist for three to five decades. In the fifth decade after the battle, for instance, the estimator of Sun and Abraham (2021) gives $\theta_5 = 0.19$, which corresponds to about 21 percent more acquisitions per decade from a battle city than from a city with no British battle. The battle decade shows the smallest coefficient even though the largest single-year inflows of the short-run results fall in it. A battle city sent 2.8 artifacts on average in the year after its first battle and 31 over the five decades after the battle decade, so the decade-level estimates measure an accumulation slower and larger than the spike. Alternatively, I apply the synthetic difference-in-differences estimator of Arkhangelsky et al. (2021), which reweights cities with no British battle to track battle cities before the battle. I also replace the outcome with an

[61] To accommodate heterogeneous and dynamic treatment effects under staggered, absorbing adoption, I report the estimators of Borusyak et al. (2024), Sun and Abraham (2021), and de Chaisemartin and D'Haultfœuille (2026).

indicator for any acquisition in the decade, which involves no transformation of the zeros. Figures A.24 and A.25 show that the results are similar. Table A.15 reports the pooled difference-in-differences coefficient for each estimator in the three figures.

4.6 Mechanisms

The main estimates establish that the Museum's acquisitions from the places where Britain fought rise sharply after the fighting and stay elevated for decades. This section asks how the objects moved and why the men who fought took them. Once Britain won, a place's movable wealth lay within reach of its forces. The combination of prize auctions and the private art market gave officers and soldiers convenient means to liquidate their takings. The prize regime made the taking systematic, and spoils could reach the British Museum soon after the fighting. What officers kept passed through private hands and the salerooms, and reached the Museum later, if at all.

4.6.1 Military access

One of the main consequences of battles is access and control. After winning a battle, British forces would be able to access local treasures and antiquities. If military access is important for the immediate rise in artifacts, such effects should also be present where Britain did not rule or control.

I examine this distinction using British-rule status. Table 5 splits the estimation sample by the city's British-rule status in $t-1$, using the Cliopatria data (Bennett et al., 2025), into cities already under British rule, cities that came under British rule later, and cities that Britain never ruled at any point in the panel.[62] The previous-year battle coefficient is 1.236 in cities already under British rule and 3.883 in cities where Britain never ruled during the panel. Cities under British rule have higher mean acquisitions, though, suggesting a more stable and not battle-driven acquisition pattern. Access also required victory. In Table 4, columns 3 and 6, victories and defeats enter one regression, and the response belongs to the victories, since defeats produce no increase and, if anything, a decline.

A second condition is what a place held. Two additional comparisons speak to the conditions under which objects could be obtained and to the objects available. Table A.16 shows that the estimated battle response is larger in countries with less developed military institutions and in countries with a larger stock of material culture in 1500, which I proxy with the technology-adoption index of Comin et al. (2010).[63] These patterns are consistent with an acquisition opportunity depending on both the effectiveness of local resistance and what a place held.

[62] Appendix B.11 details the construction of the colony measure.
[63] Appendix B.12 details the construction of the military institutions and material culture measures.

Table 5: Artifact Acquisitions by Pre-Battle Colony Status

	Number of Artifacts Acquired This Year		
	(1) Already Colony	(2) Later Colony	(3) Never Colony
Previous Year Had Any British Battle	1.236**	0.651	3.883***
	(0.501)	(0.920)	(0.600)
Unit of observation	City	City	City
City FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Number of Observations	39,533	30,598	127,596
Mean of dep. var.	1.300	0.394	0.597
SD of dep. var.	30.019	7.167	15.439

Note: PPML on artifact counts in the 1816–1913 had-either city-year panel, split by the city's British-rule status in $t-1$ (colony status from Bennett et al. (2025) with the corrections described in Appendix B.11): already British, not yet British but later British, and never British. All columns include city and year fixed effects; standard errors are clustered at the state/province level. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

4.6.2 Wartime taking

Direct wartime taking was prevalent and expected by military forces. The prize regime described in Section 2.2 granted captured property to the troops and paid them shares of the sale proceeds. Taking was also deliberate rather than incidental. In an extreme case, the Museum sent one of its staff with Robert Napier's army to Magdala in Ethiopia, with a £1,000 budget to acquire manuscripts and regalia. The staff member subsequently bought material at the army's prize sale (Patrizio Gunning and Challis, 2023). In 1897, the commanders at Benin looted the palace, gave the officers their trophies, and shipped some 300 plaques to the Foreign Office. The local British administration sold other pieces for its own revenue (Lidchi, 2022; Coombes, 1994).

An even more straightforward source is the Museum's own records. For some artifacts, the Museum's own notes state that the artifact came from a war or was taken in one. If direct taking drove the inflow, the post-battle response should be sharpest for these artifacts. I re-estimate the baseline specification for subsets of artifacts with clear war-related provenance. Alongside the full artifact count, I consider artifacts whose recorded source names a military officer[64]; those whose acquisition and excavation notes connect them to a war through a campaign or battle name, a regiment, a ship, or a government; and those whose acquisition and excavation notes explicitly record taking, using words such as "loot," "plunder," "captured," or "prize."[65] Table 6 shows that the post-battle coefficient is positive

[64]The catalog's acquisition field records how the Museum received each artifact and names the counterparty, for example "Purchased from: Maj-Gen John Smith" or "Donated by: Capt Adam Brown". Appendix B.1 describes how I parse military persons from the field.

[65]Appendix B.18 details the war-related and explicit-taking sets. I reviewed by hand every distinct note

Table 6: British Battles and Artifact Acquisitions by Recorded Provenance

	Number of Artifacts Acquired This Year				
	(1) Full sample	(2) Military source	(3) War-related	(4) Explicit loot	(5) None of (2)–(4)
Previous Year Had Any British Battle	2.150***	2.654***	4.237***	4.693***	2.066***
	(0.534)	(0.973)	(0.462)	(1.132)	(0.638)
Unit of observation	City	City	City	City	City
City FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Number of Observations	198,450	198,450	198,450	198,450	198,450
Mean of dep. var.	0.704	0.036	0.010	0.002	0.661
SD of dep. var.	18.460	3.139	0.761	0.455	18.154

Note: The unit of observation is a city-year; the estimator is PPML and the treatment is an indicator for a British-involved battle at the same location in the previous year. The dependent variable narrows across columns from the full count of acquired artifacts (1) to artifacts acquired from a source bearing a military title (2), to the *war-related* set (3), to the *explicit-loot* set (4), and column (5) counts the artifacts in none of the three sets; the provenance sets are built from the British Museum's own acquisition and excavation notes (Appendix B.18). All columns include city and year fixed effects; standard errors are clustered at the state/province level. Dependent-variable means, SDs and observation counts are computed over the full estimation panel. The grid-level analog is reported in Appendix Table A.36. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

across these outcomes and increases with more explicit wartime provenance. It rises from 2.15 for the full artifact count to 2.65 for artifacts acquired from military persons, to 4.24 for artifacts whose notes connect them to a war, and to 4.69 for artifacts whose records acknowledge war-taking. These results establish that direct taking is an important part of the acquisition response. Still, the Museum's records capture a small part of the artifacts that conflict brought to it. Column 5 counts the artifacts that appear in none of the previous three columns, and their coefficient of 2.07 is close to the full count. Battles raised the inflow of artifacts that the catalog never connects to a war by about as much as the inflow of all artifacts.

4.6.3 Prize sales, auctions, and other liquidation channels

Various channels facilitated the liquidation of captured property for military persons who took them. The first is prize sales, and they provided fast tracks for artifacts to arrive at the Museum. Table A.1 lists prize funds for 1816–1913 combined from the *London Gazette* and cases mentioned in the literature, and Figure A.26 shows an example of the Royal Warrants.[66]

text matched by the explicit-taking patterns, and Table A.17 shows representative notes.

[66]Section 2.2 shows that prize sales were systematic and institutionalized. I extract every prize notice that appears in the Gazette, and Appendix B.8 details the extraction. The coverage from the *London Gazette* is

It includes 33 funds for named campaigns and expeditions. Among the 33 funds, 20 funds stated a total monetary value, totaling about £3.4 million, or £530 million at 2025 prices. Nearly all of it was the sale of captured treasure. The largest funds included sales of jewels, specie, and plate from sacked palaces and the treasuries of defeated rulers. In some of the cases the records also show how the prize put large sums in the hands of the force. For instance, Lord Combermere took £60,000 from Bharatpur, about £8 million at 2025 prices (Biddulph, 1933). Prize sales could move the objects to the Museum and the salerooms quickly. For example, the Museum's agent bought at the Magdala prize auction in 1868 and his purchases entered the collection the same year (Patrizio Gunning and Challis, 2023). The Kumasi regalia went to Garrard's within three months of the campaign, and 16 pieces reached the Museum in the year of the sale (Watt, 2023).

Campaign objects also had a wide presence in the auction houses, and this channel could be slower and lead to a larger underestimate in my main results. Historians and museum scholars have traced these sales in great detail as case studies.[67] To get a more comprehensive picture, I extract lot descriptions from the *Art Sales Catalogues Online* corpus and obtain 14.5 million lots across 27,751 digitized catalogues before 1900.[68] I then flag all lots that are explicitly said to have been taken from war[69] and obtain 1,803 lots in 138 sales from 19 British campaigns. Yuanmingyuan items make up a majority of them,[70] and Panel (a) of Figure 4 plots these 1,643 lots by sale year. There is a notable increase in auction sales after the taking, which lasted for decades, yet the Museum only registered 13 artifacts from Beijing within four years of the sack. Panel (b) extends the record to the 18 other campaigns, whose lots span several decades after the original battle. While only 83 out of the 1,803 lots have a hammer price on the original documents, they totaled £2,869 (£493,000 at 2025 prices).

Other channels also carried campaign objects to the market and the Museum. Collections

not universal, though. As Section 2.2 discussed, only the larger funds were paid out under Royal Warrants and appeared in the Gazette. Booty that prize agents sold and settled on the spot never reached it. In addition, what counted as prize in India was decided by the Government of India (Parliamentary Papers, 1860), and much of it was distributed there. The table therefore has to rely on multiple sources and still may understate both the number of funds and the money they paid out.

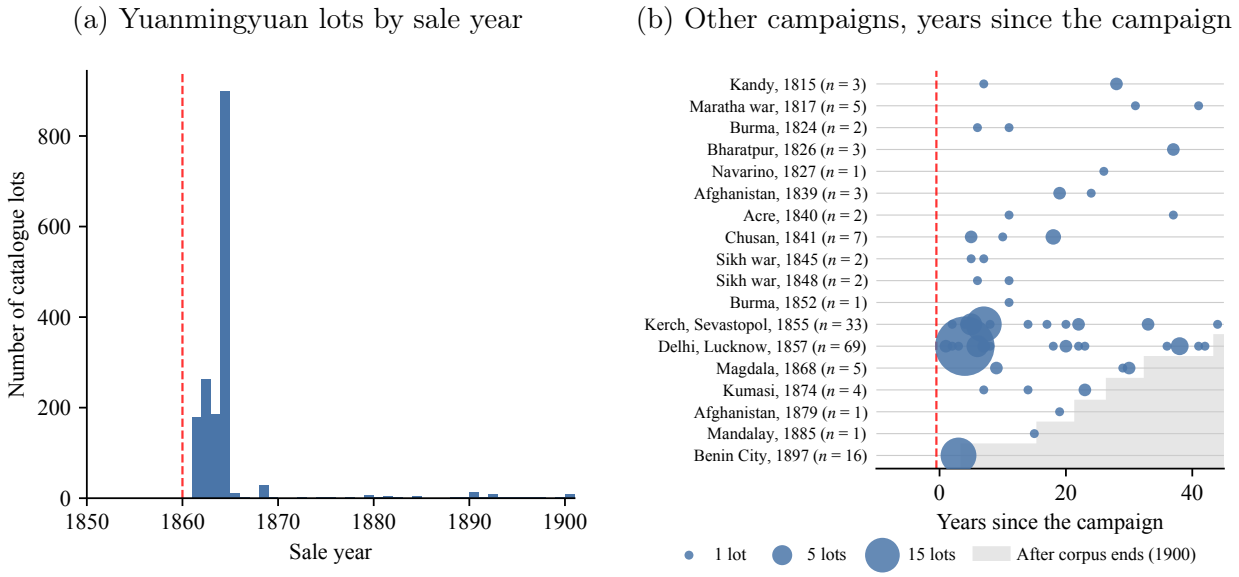
[67]For instance, Tythacott (2018b) follows collections looted from Beijing in 1860 through the London salerooms and documents 22 Yuanmingyuan auctions between 1861 and 1897, summing to 1,329 objects.

[68]A lot is the unit of sale printed in the catalogue and can hold several objects, so every count in this section is a count of lots, not of objects.

[69]A lot is flagged when the catalogue states that the object was taken in a campaign or came from the Yuanmingyuan, a campaign place, or a defeated ruler, or the sale as a whole is a documented sale of loot. Appendix B.10 provides more details on the extraction, and Figure A.27 shows example pages.

[70]Sellers explicitly advertised campaign provenance, and officers consigned many of the lots. In 1861 alone, 179 lots appear under headings such as "The following are the property of an officer of Fane's Horse, and brought from the Summer Palace at Pekin." The title pages name a military consignor for 123 of the lots, for instance Colonel Luard's Yuanmingyuan enamels in 1861.

Figure 4: Campaign Objects in the Salerooms



Note: Panel (a) plots the 1,643 lots sold as Yuanmingyuan objects by sale year. The dashed line marks the sack of October 1860. Panel (b) plots the 160 lots from the eighteen other campaigns by years since the campaign, with the circle area proportional to the number of lots. The corpus ends in 1900, and the shaded area marks the years after that end.

formed on campaign could come to market when their owners died.[71] Dealers also stood between the auction houses and the Museum.[72] Excavation was another common route (Stevenson, 2019). Once military control secured access, organized excavation followed.[73]

To summarize, battles gave British forces access to a place's movable wealth. The objects were taken by design, under a regime that rewarded the taking, and the Museum's own records acknowledge it. Turning the spoils into cash was convenient, fast through prize sales and slow through the salerooms, suggesting underestimates in the main results. Estates,

[71] For instance, the family of Admiral Rawson (commander of the Benin expedition in 1897) sold his Benin collection in 1948 (Grout, 2022).

[72] For instance, six years after the Second Opium War, the dealer Israel Russell bought a sandstone figure at a sale of "spoil from Yuanmingyuan," and the Museum purchased it from him thirteen months later (Tythacott, 2018b). This transaction only shows up as "Purchased from: Israel Russel" in the British Museum, and therefore does not enter the short-run event study or the military provenance results.

[73] For example, the Egypt Exploration Fund was founded in 1882, the year British forces occupied Egypt. It was co-founded by a keeper at the British Museum (Stevenson, 2019), and it channeled more than 11,000 Egyptian artifacts into the British Museum collection during the main analysis period. In another example, Aurel Stein's Central Asian expeditions, financed jointly by the Government of India and the British Museum, carried thousands of Silk Road manuscripts and antiquities into the collection. His permits ran through the British Legation in Beijing, established after the Second Opium War (Hevia, 2003). For his second expedition the Legation's own Chinese rendering of his title mistakenly styled Stein "Prime Minister of Education of Great Britain." The head of the Legation noted the next day that the title would rank him with the highest provincial officials, and it discouraged them from obstructing him (Wang, 2007).

dealers, and excavation added further routes.

4.7 The scale of battle-related acquisitions

A back-of-the-envelope calculation suggests that battles account for nearly a fifth of the Museum's acquisitions from the cities where Britain fought in the sample period. Let $\widehat{\beta}_h$ be the event-study coefficient h years after a battle (Figure 2), N_h the number of city-years h years after their most recent battle, and $\bar{y}_h$ the Museum's mean acquisitions from them. The battle multiplied acquisitions in those city-years by $e^{\widehat{\beta}_h}$, net of the city and year fixed effects, so without it the Museum would have acquired $\bar{y}_h e^{-\widehat{\beta}_h}$ per city-year.[74] Summing the difference over the battle year and the three years after it gives $\sum_{h=0}^{3} N_h \bar{y}_h (1 - e^{-\widehat{\beta}_h}) \approx 1{,}570$ artifacts, using the inputs for each year as reported in Table A.18. The number represents 18.2 percent of the 8,654 artifacts the Museum acquired from those cities in the sample period and 4.2 percent of the 37,276 it has acquired from them in any year. These artifacts also matter more to the Museum. Among its 1816–1913 acquisitions from battle cities, 16.7 percent of the artifacts acquired in the battle year or the three years after it have been exhibited, against 5.1 percent of the rest and 6.0 percent of the acquisitions from cities without a battle.

To get a sense of the monetary value of the artifacts, I predict a historical auction price for every Museum record with a multilingual BERT model fine-tuned on 261,122 priced lots from the Getty Provenance Index and *Art Sales Catalogues Online*. The model reads each lot's printed description together with its sale year, place, and auction house, and for a Museum record it reads the catalog's description, object type, materials, technique, dimensions, maker, culture, and place and date of production, with prices and acquisition details withheld. The 2,172 artifacts acquired from battle cities in the battle year or the three years after it have a combined predicted price of £21,600 at 1900 prices. If the 1,570 artifacts attributed to battles are worth the same on average as the other artifacts in these years, the battle-related inflow is worth £15,600 at 1900 prices. That sum is 21 percent of the model's valuation of the Museum's acquisitions from battle cities in the sample period. The sum understates the value that the fighting moved. It covers only the four years immediately after a battle, and the machine learning exercise prices each object at the saleroom rates of its time without the premium of these cultural objects. The Museum was also one destination among the salerooms and estates. The battle cities give the most precise measure, but objects from the same campaigns could be recorded under other places in the same country, and the attribution does not reach them.[75]

[74] In the rare cases where a city had a second battle within the four-year window, I apply only the most recent battle's multiplier, which is an underestimate. Appendix B.16 gives the details.

[75] Appendix B.16 describes the training data, the price harmonization, the model, and its validation. The

The British Museum kept receiving artifacts from battle cities for decades afterward. The long-run event study implies 12 to 19 percent more acquisitions per decade over the battle decade and the five decades after it (Table A.15, columns 1 to 3), and 19 to 26 percent in the fifth (Figure 3). The any-acquisition indicator gives the same picture without transforming the zeros (Table A.15, column 6, and Figure A.25). A battle city was 4 percentage points more likely than a city with no British battle to send at least one artifact in a given decade, and 5 to 7 percentage points more likely in the third to fifth.

5 Military Officers

In this section, I investigate whether the battle-related taking documented in the preceding sections generated private returns for the officers who carried it out, and whether more officers bought commissions in the regiments of campaigns that paid large prize money.

Section 5.1 takes the first hypothesis to the probate record. It tests whether artifact-heavy battles predict higher wealth at death among battle commanders, conditional on a rich set of personal characteristics. Section 5.2 takes the second hypothesis to the *London Gazette*'s military officer promotion notices. In an event study around the artifact-rich 1857–58 Indian Mutiny, it tests whether commission purchases rose in the regiments that fought the campaign relative to purchasable regiments with no substantial combat in the period.

5.1 Wealth of Battle Commanders

5.1.1 Empirical design and results

Sample and measurement. I use the cross-section of the 218 battle commanders whom I match to probate records to test whether commanders of artifact-heavy battles left larger estates. If battle-related taking generated private returns, commanders of battles that yielded larger spoils should have died richer. Spoils are hard to measure directly, given the various routes discussed in Sections 2.2 and 4.6.3. Since the British Museum drew on the routes that dispersed them, the post-battle inflow from a battle's location is a good proxy for its spoils.

To measure which battles had higher spoils, I classify a battle as *artifact-heavy* using three thresholds. Under the strict definition, a battle is artifact-heavy if the British Museum acquired more than twice as many artifacts from that city in the window after the battle as in the same window before it; when the pre-battle count is zero, the post-battle count must instead exceed five artifacts. I also show two alternative definitions, one requiring any positive inflow and the other an inflow above the median among battles with positive

model's errors on individual records are large, so I use it only for these shares. It measures neither present-day values, nor officers' receipts, nor the total value of wartime extraction.

inflow. I compute each definition at both 3-year and 20-year windows, allowing for both the immediate and the slow release of battle objects.

Empirical strategy. I estimate the following officer-level regression:

$$Probate_i = \beta\, ArtifactHeavy_i + X_i'\gamma + \varepsilon_i, \tag{4}$$

where $Probate_i$ is commander i's probated wealth at death and $ArtifactHeavy_i$ is his count of artifact-heavy battles.[76] The controls X_i are pre-treatment, including age-at-first-battle decade bins, rank-at-battle fixed effects, and birth-country, noble-family, father-military, and regiment-type (engineers, artillery) indicators. I do not control for rank at death, peerage, or honors, since those are potential outcomes of profitable service.

The identifying assumption is that, conditional on the set of personal characteristics, a commander's assignment to artifact-heavy rather than artifact-scarce campaigns was unrelated to his latent wealth prospects. Two main concerns might arise in this setting. The first concern, on ability, is that commanders with higher abilities were assigned to more *important* battles, and that ability rather than spoils raised their estates. The second concern, on choice, is that commanders could seek the campaigns that promised spoils, or their superiors could reserve such campaigns for favored officers. The data and the institutional setting limit both concerns. First, on the ability concern, I use the personal characteristics to proxy for ability at the time of battle. In addition, artifact-heavy is a poor proxy for importance, so sorting by ability into important battles does not necessarily sort commanders into artifact-heavy ones.[77] Second, on the choice concern, commanders often fought because they were posted at a place nearest to the enemy,[78] or the state or superiors picked them for the campaign. Admiral Harry Rawson, for instance, led the Benin expedition of 1897 because the killing of the acting consul-general's party in January happened in the area covered by the Cape station, which he had held since 1895. No officer could appoint himself to a command, since in war the Secretary of State chose the officer to command in chief

[76] I credit jointly commanded battles to each named commander.

[77] Whether a battle released objects depended on what its location had to take, especially the depth of its historical material culture, proxied by the technology-adoption index of Comin et al. (2010) as shown in Table A.16, rather than on how much the battle mattered militarily or politically. For instance, the battles of the 1837 rebellion in Lower Canada, politically important for British North America, generate no post-battle British Museum inflow at either accounting window. The three commanders of these battles all died poorer than the average commander. John Colborne, who led the offensive at Saint-Eustache and rose to field marshal and a peerage, left £5,100 at 1900 prices, against a mean of £49,000 among the nineteen sample commanders who also died field marshals.

[78] A preliminary screening of the 406 commander-battle pairs in the sample, described in Appendix B.5, shows that in 31 percent of them the commander already held the standing command in the theatre or the neighboring command when the fighting began.

Table 7: Probated Wealth and Participation in Artifact-Heavy Battles

	Probate Wealth at Death (£ thousand, 1900 prices)	
	(1)	(2)
Panel A: 3-Year Window		
Number of artifact-heavy (strict 2× pre) battles	12.252*	14.380*
	(6.848)	(7.704)
Number of artifact-heavy (any post-inflow) battles	7.501***	9.238***
	(2.526)	(3.084)
Number of artifact-heavy (above median, inflow > 0) battles	13.594**	15.381**
	(6.837)	(7.612)
Panel B: 20-Year Window		
Number of artifact-heavy (strict 2× pre) battles	12.103***	13.390***
	(4.155)	(4.811)
Number of artifact-heavy (any post-inflow) battles	6.863***	7.432***
	(2.044)	(2.187)
Number of artifact-heavy (above median, inflow > 0) battles	10.904***	12.068***
	(3.525)	(4.052)
Background and Rank Controls	No	Yes
Number of Observations	218	218
Mean of dep. var. (£k, 1900)	20.42	20.42
SD of dep. var. (£k, 1900)	35.37	35.37

Note: The unit of observation is a battle commander linked to a probate record; the dependent variable is the commander's deflated estate at death (£ thousand, constant 1900 prices). Each cell is a separate OLS regression of estate value on the count of *artifact-heavy* battles the commander led, under three definitions of artifact-heavy: post-battle British Museum inflow from the battle's nearest city exceeds twice the pre-battle inflow (strict 2×), is any positive amount (any post-inflow), or is above the median among battles with positive inflow. Panel A measures inflows over a 3-year post-battle window; Panel B over a 20-year window. Column (1) includes no controls; column (2) adds pre-treatment background and rank controls (age-at-first-battle bins, rank-at-battle group, noble-family background, father's military status, Royal Artillery/Engineers, and birth country). Standard errors (in parentheses) are heteroskedasticity-robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

and the Commander-in-Chief recommended other commanders (Biddulph, 1904; Beckett, 2018). The event that set off the campaign usually fixed where the commander fought, and therefore neither he nor his superiors chose the place.

Results. Table 7 reports the estimates. On the 3-year window (Panel A), each additional artifact-heavy battle is associated with roughly £7,500–£15,000 of additional probated wealth, positive under all three definitions. The 3-year window captures the short run. Because seized material often reached the British Museum only after years in auction rooms and private possession (Section 4.6.3), this window catches the fastest-arriving spoils and classifies late-releasing campaigns as artifact-scarce. The 20-year window (Panel B) allows for delayed release. There, each additional artifact-heavy battle is associated with roughly

£7,000–£13,000 of additional probated wealth, 34 to 66 percent of the £20,400 sample mean, significant at the 1 percent level across all three definitions and stable to adding the pre-treatment controls.

Robustness. The results are robust to winsorizing or trimming estates at the 99th percentile (Table A.19), to estimating wealth in logs or by Poisson (Table A.20), and to accounting windows of 2 to 5 years in the short run and 20 to 50 years in the long run (Table A.21). They hold on both margins of the treatment: an indicator for having led any artifact-heavy battle on the extensive margin, and the inverse hyperbolic sine of the post-battle number of artifacts acquired on the intensive margin (Table A.22). Lee (2009) bounds on the probate linkage selection still show positive and significant results (Table A.23). No single commander drives the result. Dropping each of the commanders in turn leaves every estimate within one standard error of the full-sample coefficient (Figure A.28).

5.1.2 Mechanism

In this section, I turn to how the spoils of campaigns contribute to commanders' estates. To start with, spoils reached commanders' wealth through the liquidation routes that Sections 2.2 and 4.6 describe. The prize regime turned captured treasure into cash, and what officers kept they could sell in the salerooms or hold in the family for decades.[79] Furthermore, a successful campaign helped raise its commander to higher rank, to honors, and to offices that paid several times an officer's pay.

Prize money. Prize money, the cash that the state paid its officers from the sale of looted treasure, can explain an important share of officers' wealth at death. To obtain comprehensive records on prize money, I extract every Royal Warrant and distribution notice in the *London Gazette*, and supplement them with records from Hansard, the *Calcutta Gazette*, the India Office prize rolls, and the commanders' biographies.[80] I obtain a prize money figure for 29 of the 218 commanders, for 14 of whom a source states the amount for the man himself, and for the other 15 I impute the amount from the fund's per-rank distribution and the officer's rank at the battle. Table A.24 lists each commander's fund and source.[81] Among the 14 commanders with a documented prize amount, prize money is on average 40 percent

[79] Note that this does not mean that commanders grew rich by selling objects to the Museum, though that channel did exist for some officers. The inflow is a proxy for the spoils a battle released, and the channels examined here are the ones through which those spoils, whoever eventually held the objects, became a commander's money.

[80] Appendix B.9 describes the search and sources in more detail.

[81] The figures understate prize money, because booty settled on the spot never reached the Gazette, funds distributed in India were gazetted there rather than in London, several funds printed no ladder, and where later distributions were gazetted without a rate only the first installment is counted. See Section 4.6.3 for relevant discussion.

of their probated wealth at death. Among all 29 commanders with a prize money figure, the mean is 32 percent. For 6 of the 29, prize money comes to more than a quarter of the probated estate. Admittedly, since a few commanders-in-chief drew large sums while most officers' shares were small and the coverage is incomplete, these statistics are suggestive. Still, they show that prize money can be a substantial part of a commander's estate.

For instance, Colin Campbell, the son of a Glasgow cabinetmaker who bought his early promotions, was entitled as commander-in-chief in India during the Mutiny to about £30,000 from four prize funds, about £5 million at 2025 prices, and he died in 1863 with £102,000 at 1900 prices, the seventh largest estate among the 218 commanders. Archdale Wilson, a clergyman's son who served in the Bengal Artillery, took the reserved commander's share of the Delhi fund, about £11,300, yet he left £3,700 in 1874, a third of that share. Further down the ladder, Harry Smith's campaign allowance for the Sutlej campaign, about £2,400 at 1900 prices, was 40 percent of his probated wealth of £5,900, and Francis Rowcroft's one-twenty-fifth share of the Sarun fund, about £200, was 14 percent of his probated wealth of £1,400.

Private sales and retained objects. Officers also profited from the objects they kept, either by selling them or by holding them as family property, and this channel left far fewer records than prize money. The literature documents a few cases. For instance, Captain Charles Gordon valued the Yuanmingyuan screen he gave General John Michel in 1860 at no less than £1,000 (Hill, 2023), and the Benin pieces of Harry Rawson (commander of the Benin expedition) were sold by his family in 1947 for £2,000 (Grout, 2022). The auction catalogues of Section 4.6.3 also name an officer as consignor for some of the looted lots. For example, Colonel Luard sold twenty Yuanmingyuan enamels in London in June 1861, Lieutenant-Colonel Muter eight jades, enamels, and ivories taken from the palace in 1864, and Captain Kendall seven Lucknow swords in 1861, among them the state executioner's sword of Oudh. They did not lead the respective battles and therefore do not enter the commander sample, yet they did fight in the campaigns as officers and profited from the spoils.

Career rewards and time to realize gains. Campaigns also paid through honors, offices, and other forms of rewards. First, I test whether more artifact-heavy battles are associated with later honors and offices. Table A.25 shows that in the 20-year window, an additional artifact-heavy battle raises the probability of a peerage at death by 12.9 percentage points, against a mean of 7.3 percent, and the probability of high office, a governorship or a command-in-chief, by 9.3 points against a mean of 28 percent. In the 3-year window the peerage result is similar, while the high-office result fades. Second, I test whether the

time to realize gains matters. If career rewards helped compound the spoils of battles over the years that followed, commanders who did not live to collect them should show a smaller premium. Table A.26 confirms the prediction. Commanders who died within three years of their last battle, with little time to realize the gains, left smaller estates than their peers. Commanders whose death was a result of a battle itself had even less time, though this estimate loses precision once controls are added. Commanders who died at a battle that was *lost* had no prize to share at all, and they left the poorest estates.

Several case studies help support this point. The Mutiny made Campbell a peer as Baron Clyde in 1858 and a field marshal four years later. Magdala made Napier a peer and led on to the command-in-chief in India and the governorship of Gibraltar. Benin brought Rawson a knighthood, and he later moved to the governorship of New South Wales, which paid £5,000 a year for seven years (Rawson, 1914), which sums to twice the wealth he left at death.

5.1.3 Broader military officer comparison

The battle commander cross-section has detailed pre-treatment controls but only 218 observations. To supplement it, I turn to the far larger military officer population contained in the probate records. The occupation field of the 1858–1906 probate records enables me to identify 13,556 military officers with their rank at death. I remove every record that matches a battle commander, so this comparison group contains no one from the battle-leader sample (see Appendix B.6 for more details). Of the 218 matched commanders, 140 died within the 1858–1906 calendars, and I add them to this population to compare three groups: *Officers in probate*, *Other battle commanders*, who led only artifact-scarce battles, and *Artifact-heavy battle commanders*, who led at least one artifact-heavy battle on the 20-year window. Because rank at battle and the other pre-treatment controls are unobserved for *Officers in probate*, the controls in this specification are rank-group-at-death and death-decade fixed effects.

Table A.27 reports the comparison. The first row shows that a commander of any battle left about £17,000 more than an officer in probate who never led one. The next two rows split the commanders: *Artifact-heavy battle commanders* left about £33,700 more than *Officers in probate*, and *Other battle commanders* about £12,900 more. Adding rank-group-at-death and death-decade fixed effects in columns 2 and 3 leaves all three premiums similar in size and significant at the 1 percent level. Leading a battle therefore paid on its own, even against officers who reached the same rank at death, and the artifact-heavy premium of Section 5.1.1 comes on top of that return to command.

5.2 Rank purchasing

The probate evidence shows that spoils reached the commanders who led the fighting. I next turn to whether officers responded to that prospect. Officers who had shared in a lucrative campaign had more money to spend on their careers, while officers who had not might find the regiments that had earned them more attractive, since further spoils were likely. The purchase system allows me to test both predictions. Until 1871 an officer paid to enter a regiment and to get promotion within it, so richer incumbents would buy their next step and outsiders would buy into the regiments that had earned prize money more often than into comparable regiments.

Sample and design. I use an annual panel of purchasable British Army regiments over 1848–1868, built from the *London Gazette*'s officer movements, as discussed in Section 3.4. The underlying extraction records 102,368 promotions, of which 24,070 are explicitly *by purchase*. As discussed in Section 2.2, each purchase was a large commitment. An infantry majority cost about eleven years of a major's pay. The test is whether commissions became more sought after in the regiments of a campaign that visibly enriched its officers.[82] I use the setting of the 1857–58 Indian Mutiny as the context for testing this hypothesis.[83] As discussed in Section 2.2, its prize money was among the largest of the century, about £1.2 million across eleven funds (Table A.1), and it made its commander-in-chief a wealthy man.[84]

I estimate the following difference-in-differences event study at the regiment-year level:

$$y_{rt} = \sum_{\substack{k=1848 \\ k \neq 1858}}^{1868} \beta_k \cdot \mathit{Treated}_r \cdot \mathbf{1}[t = k] + \alpha_r + \lambda_t + \varepsilon_{rt}, \tag{5}$$

where y_{rt} is the annual count of purchase events in regiment r in year t, $\mathit{Treated}_r$ indicates the campaign regiments, β_k is the difference between treated and control regiments in year k relative to 1858, and α_r and λ_t are regiment and year fixed effects. The omitted base year is 1858, the campaign's final year. Standard errors are clustered by regiment.

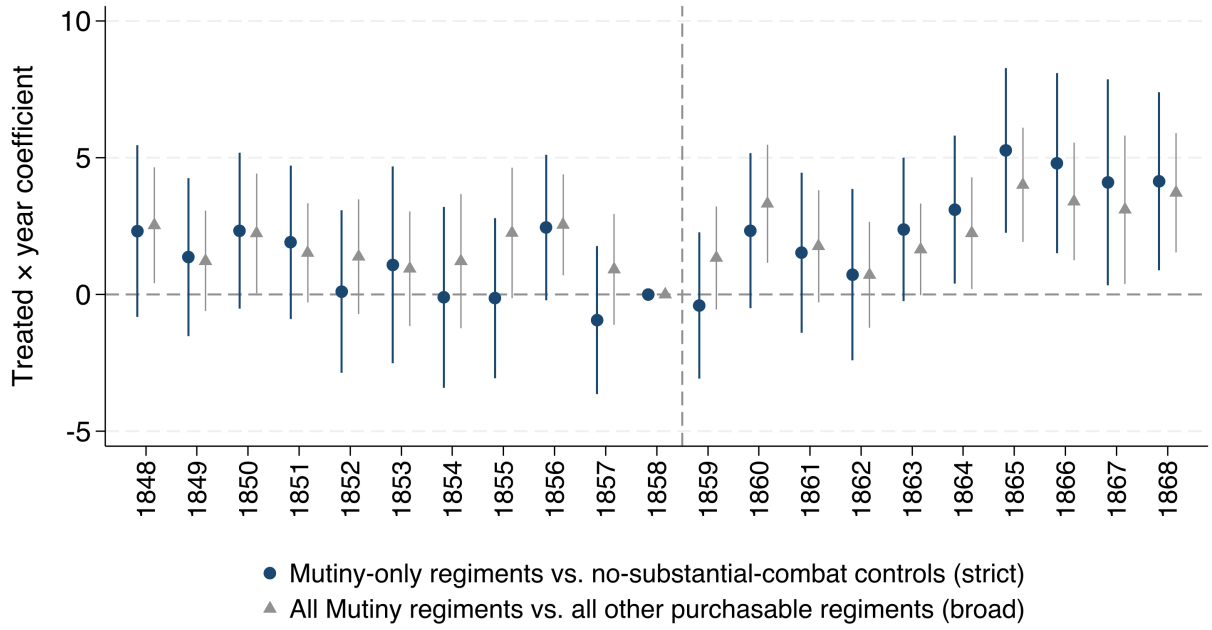
In the first design (strict), the treated group is the 25 regiments whose principal campaign was the Mutiny: purchasable regiments credited with substantial 1857–58 campaign service by the battle rosters, the *London Gazette* dispatches, and regimental histories. I

[82] The Gazette shows the transactions but not the prices: the regulation tariff was fixed by royal warrant, and the over-regulation premium, though common, was illegal and left very scattered records. Therefore, I use quantities, the volume and direction of purchase activity, to proxy for the market's response.

[83] Regimental campaign histories overlap heavily, with most corps cycling through several wars within a decade, so a design pooling every campaign would compare newly treated regiments to regiments still responding to their own recent campaigns. I show a second case, the First Afghan War of 1839 to 1842, in the robustness paragraph below.

[84] Some of the prize funds are discussed in Section 5.1.2 and reported in Table A.24.

Figure 5: Indian Mutiny Event Study: All Purchase Events



Note: Event studies of all commission-purchase events (by-purchase promotions plus purchased first commissions) at the regiment-year level over 1848–1868, under two specifications. The circles compare the 25 regiments whose principal campaign was the Mutiny with the 31 control regiments credited with no substantial combat in the period (the strict design); the triangles compare all 38 regiments with substantial Mutiny service, including Crimean War veterans, with all other purchasable regiments (the broad comparison). Appendix B.19 details both classifications. The specifications include regiment and year fixed effects, and 95% confidence intervals are reported with standard errors clustered by regiment.

exclude regiments with substantial other battle presence, including the Crimean War, whose just-prior shock would otherwise contaminate the pre-trends. The control group is the 31 purchasable regiments credited with no substantial combat anywhere over 1848–1870.[85] In the second design (broad), I define the treated group as all 38 regiments with substantial Mutiny service, including the Crimean War veterans, and the comparison group is the entire remainder of the purchasable army. The panel covers 1848–1868, and purchase notices remain observable through 1870, before the Cardwell reforms abolished commission purchase. Appendix B.19 lists the regiments in each group under both designs and the evidence behind each assignment.

Results. Figure 5 plots the year-by-year coefficients β_k from equation (5) for all purchase events, under the strict design and the broad comparison. In both, the coefficients show no upward drift before the campaign, suggesting the purchase markets of the groups moved

[85]Both groups contain only regiments in which officers bought and sold commissions, so I exclude the artillery, engineers, marines, and Native and East India Company units, where no purchasing system operated.

together. After the regiments returned from the field in 1859, the coefficients turn positive and build steadily, peaking in 1865 at about five additional purchases per regiment-year in the strict design and about four in the broad comparison, a peak that more than doubles the treated regiments' pre-campaign average of roughly four purchase events per regiment-year. The pooled difference-in-differences estimate is 1.85 additional purchases per regiment-year, 45 percent of that average (Table A.28, column 1).

Robustness. Two further comparison groups give similar results to the two designs above: the regiments that fought a battle elsewhere in the period, and the regiments untouched by the Crimean War or the 1860 Beijing campaign, the period's two other artifact-heavy campaigns (Table A.29, Panel A; Figure A.29). The estimate stays positive and significant at the 10 percent level or better under Poisson and inverse hyperbolic sine specifications, winsorized counts, normalization by each regiment's pre-campaign officer traffic, a wild cluster bootstrap by regiment, and samples without the cavalry, the two treated regiments whose Crimean service stopped short of a field battle, or the four control regiments with unrecorded fighting inside the window (Table A.29, Panels B to D). Dropping any one of the 56 regiments leaves it between 1.59 and 2.14 (Figure A.30). The same design applied to the First Afghan War of 1839 to 1842, whose Ghuznee and Kelat prize was gazetted, gives a rise of 46 percent of the treated regiments' pre-campaign purchase rate, against 45 percent for the Mutiny, with a flat pre-campaign path (Figure A.31; Table A.30). Appendix B.20 details the treated and control regiments for this case.

Mechanisms. Three drivers could raise purchases in the regiments that had fought. A lucrative campaign might increase the attraction of those regiments for more spoils in the future (Biddulph, 1933; Strachan, 1984). Prize money in hand meant better financial means to purchase (Allen, 1998; Engels, 1858). Enriched incumbents could retire and create vacancies to purchase once the campaign ended, since officers could rarely sell while their regiment was on active service (Bruce, 1980; Engels, 1858; Parliamentary Papers, 1871b). Table A.31 tests each driver with the count it predicts, and Figure A.32 plots the corresponding event studies. Exchanges into the treated regiments rose by 45 percent of their pre-campaign mean, and purchased first commissions by 50 percent, so more outsiders entered by both routes. Incumbents bought more promotions within their regiments. Relative to the controls, the treated regiments record 1.10 additional within-regiment purchases per regiment-year, 46 percent of their pre-campaign mean of 2.39 and the largest single component of the rise in purchases. Retirements also rose, though less precisely, and the estimate for purchases into the vacancies that retirements created is 0.57, less than a third of the 1.85 for all purchases. The broad comparison gives the same ordering with smaller estimates.

Both predictions of this section hold. Officers who exchanged into the regiments or bought first commissions there held no prize from the campaign, so their entry reflects the attraction of the regiments and cannot reflect cash from it. Incumbents' purchases, the largest component of the response, could reflect their prize money or the same attraction, and the Gazette, which records the transactions but not their prices or the buyers' receipts, cannot apportion the two. The vacancies that enriched incumbents released account for less than a third of the response. Spoils therefore drew officers toward the regiments that had earned them, and the officers who had earned them bought their next steps, whether with the money or in the same expectation.

6 Conclusion

States have long let their soldiers keep a share of what they captured (Redlich, 1956; Parrott, 2012). Nineteenth-century Britain ran that arrangement at scale and kept its books, in a museum catalog, the probate calendars, the *London Gazette*, and the printed catalogues of the salerooms. This paper links those records to measure the private spoils of imperial warfare and to trace who captured them, using the timing of battles within places for identification.

Battles moved objects on a large scale. The British Museum's acquisitions from a city rise sharply in the year after a British battle and stay higher for decades. The response comes from victories and from places Britain never ruled, and it is sharpest for artifacts whose own records name a wartime taking. The spoils reached the men who took them. Commanders of the battles that yielded the most objects died richer than their peers of the same rank and background, through prize money, the sale of what they kept, and the offices that followed a successful campaign, and after the Indian Mutiny officers paid to enter the regiments that had fought it. Behind these results, the state licensed seizure and organized its sale, the purchase market responded to expected spoils, and the national museum came to hold a visible share of the takings.

A long debate asks whether empire paid the nation that ran it (Davis and Huttenback, 1986). The results show that empire paid the agents who fought it, and part of the payment stands today in a public collection, which helps explain how expansion persisted while the national books showed a loss. For the study of museum collections, the results supply magnitudes to an argument that has rested on individual cases and show that acquisition timing matters for provenance review.

The arrangement was not British alone. The Louvre of France, the Rijksmuseum of the Netherlands, and the Hermitage of Russia keep catalogs of the same kind, the officers of other empires left estates and careers of their own, and the same designs can show whether

those empires rewarded their officers with spoils. On the other side of the taking was the loss of the societies that made the objects. To them, the regalia, manuscripts, sacred vessels, and palace art were the records of their life, faith, and past, and their removal took away a part of their history that was more than a price tag on the prize account. Economists have measured the costs of conflict in the lives lost, the capital destroyed, the trade disrupted, and the growth lost (Blattman and Miguel, 2010; Glick and Taylor, 2010). Cultural heritage belongs in that accounting, and the registers that record its taking make the accounting possible.

References

Acemoglu, Daron, Mikhail Golosov, Aleh Tsyvinski, and Pierre Yared, "A Dynamic Theory of Resource Wars," *Quarterly Journal of Economics*, 2012, *127* (1), 283–331.

———, **Simon Johnson, and James A. Robinson**, "The Colonial Origins of Comparative Development: An Empirical Investigation," *American Economic Review*, 2001, *91* (5), 1369–1401.

Ager, Philipp, Leonardo Bursztyn, Lukas Leucht, and Hans-Joachim Voth, "Killer Incentives: Rivalry, Performance and Risk-Taking among German Fighter Pilots, 1939–45," *Review of Economic Studies*, 2022, *89* (5), 2257–2292.

Aldous, Grahame, "The Law Relating to the Distribution of Prize Money in the Royal Navy and Its Relationship to the Use of Naval Power in War, 1793–1815." PhD dissertation, King's College London 2020.

Alesina, Alberto, Enrico Spolaore, and Romain Wacziarg, "Economic Integration and Political Disintegration," *American Economic Review*, 2000, *90* (5), 1276–1296.

Allen, Douglas W., "Compatible Incentives and the Purchase of Military Commissions," *Journal of Legal Studies*, 1998, *27* (1), 45–66.

Ancestry, "Scotland, National Probate Index (Calendar of Confirmations and Inventories), 1876–1936," Database on-line, Provo, UT: Ancestry Operations, 2015. Digitised printed calendars. https://www.ancestry.co.uk/search/collections/60558/. Accessed 2026.

Arkhangelsky, Dmitry, Susan Athey, David A. Hirshberg, Guido W. Imbens, and Stefan Wager, "Synthetic Difference-in-Differences," *American Economic Review*, 2021, *111* (12), 4088–4118.

Ashenfelter, Orley and Kathryn Graddy, "Auctions and the Price of Art," *Journal of Economic Literature*, 2003, *41* (3), 763–786.

Banerjee, Abhijit and Lakshmi Iyer, "History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India," *American Economic Review*, 2005, *95* (4), 1190–1213.

Barnett, Correlli, *Britain and Her Army, 1509–1970: A Military, Political and Social Survey*, New York: William Morrow, 1970.

Barringer, Tim, "The South Kensington Museum and the Colonial Project," in Tim Barringer and Tom Flynn, eds., *Colonialism and the Object: Empire, Material Culture and the Museum*, London: Routledge, 1998, pp. 11–27.

——— **and Tom Flynn**, *Colonialism and the Object: Empire, Material Culture and the Museum*, London: Routledge, 1998.

Basnet Silwal, Shikha, "The Economics of Looting and Destruction of Cultural Heritage Sites and Objects," *Defence and Peace Economics*, 2023, *34* (2), 214–227.

Beckett, Ian F. W., *A British Profession of Arms: The Politics of Command in the Late Victorian Army*, Norman: University of Oklahoma Press, 2018.

Bell, Duncan, "Victorian Visions of Global Order: An Introduction," in Duncan Bell, ed., *Victorian Visions of Global Order: Empire and International Relations in Nineteenth-Century Political Thought*, Cambridge: Cambridge University Press, 2007, pp. 1–25.

Bennett, James S., Erin Mutch, Andrew Tollefson, Ed Chalstrey, Majid Benam, Enrico Cioni, Jenny Reddish, Jakob Zsambok, Jill Levine, C. Justin Cook, Pieter Francois, Daniel Hoyer, and Peter Turchin, "Cliopatria – A Geospatial Database of World-Wide Political Entities from 3400BCE to 2024CE," *Scientific Data*, 2025, *12*, 247.

Berman, Nicolas, Mathieu Couttenier, Dominic Rohner, and Mathias Thoenig, "This Mine Is Mine! How Minerals Fuel Conflicts in Africa," *American Economic Review*, 2017, *107* (6), 1564–1610.

Bertrand, Marianne, Robin Burgess, Arunish Chawla, and Guo Xu, "The Glittering Prizes: Career Incentives and Bureaucrat Performance," *Review of Economic Studies*, 2020, *87* (2), 626–655.

Besley, Timothy and Torsten Persson, "Wars and State Capacity," *Journal of the European Economic Association*, 2008, *6* (2–3), 522–530.

——— **and** ———, "The Origins of State Capacity: Property Rights, Taxation, and Politics," *American Economic Review*, 2009, *99* (4), 1218–1244.

——— **and** ———, *Pillars of Prosperity: The Political Economics of Development Clusters*, Princeton: Princeton University Press, 2011.

———**, Robin Burgess, Adnan Khan, and Guo Xu**, "Bureaucracy and Development," *Annual Review of Economics*, 2022, *14*, 397–424.

Biddulph, H., "The Era of Army Purchase," *Journal of the Society for Army Historical Research*, 1933, *12* (48), 221–233.

Biddulph, Robert, *Lord Cardwell at the War Office: A History of His Administration, 1868–1874*, London: John Murray, 1904.

Blattman, Christopher and Edward Miguel, "Civil War," *Journal of Economic Literature*, 2010, *48* (1), 3–57.

Bogart, Dan and Latika Chaudhary, "Extractive Institutions? Investor Returns to Indian Railway Companies in the Age of High Imperialism," *Journal of Institutional Economics*, 2019, *15* (5), 751–774.

Bonfatti, Roberto and A. Kerem Coşar, "Rise and Fall of Empires in the Industrial Era: A Story of Shifting Comparative Advantages," Working Paper 30295, National Bureau of Economic Research 2022.

Borusyak, Kirill, Xavier Jaravel, and Jann Spiess, "Revisiting Event-Study Designs: Robust and Efficient Estimation," *Review of Economic Studies*, 2024, *91* (6), 3253–3285.

Brewer, John, *The Sinews of Power: War, Money and the English State, 1688–1783*, London: Unwin Hyman, 1989.

Bruce, Anthony P. C., *The Purchase System in the British Army, 1660–1871*, London: Royal Historical Society, 1980.

Caselli, Francesco, Massimo Morelli, and Dominic Rohner, "The Geography of Interstate Resource Wars," *Quarterly Journal of Economics*, 2015, *130* (1), 267–315.

Caygill, Marjorie, *The Story of the British Museum*, 3rd ed., London: British Museum Press, 2002.

Cengiz, Doruk, Arindrajit Dube, Attila Lindner, and Ben Zipperer, "The Effect of Minimum Wages on Low-Wage Jobs," *Quarterly Journal of Economics*, 2019, *134* (3), 1405–1454.

Chandler, David and Ian Beckett, *The Oxford Illustrated History of the British Army*, Oxford: Oxford University Press, 1994.

Chen, Jiafeng and Jonathan Roth, "Logs with Zeros? Some Problems and Solutions," *Quarterly Journal of Economics*, 2024, *139* (2), 891–936.

Collier, Paul and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers*, 2004, *56* (4), 563–595.

Comin, Diego, William Easterly, and Erick Gong, "Was the Wealth of Nations Determined in 1000 BC?," *American Economic Journal: Macroeconomics*, 2010, *2* (3), 65–97.

Conley, Timothy G., "GMM Estimation with Cross Sectional Dependence," *Journal of Econometrics*, 1999, *92* (1), 1–45.

Coombes, Annie E., *Reinventing Africa: Museums, Material Culture and Popular Imagination in Late Victorian and Edwardian England*, New Haven: Yale University Press, 1994.

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell et al., "V-Dem Country-Year Dataset v16," Varieties of Democracy (V-Dem) Project, 2026. DOI: 10.23696/vdemds26.

Cummins, Neil, "Where Is the Middle Class? Evidence from 60 Million English Death and Probate Records, 1892–1992," *Journal of Economic History*, 2021, *81* (2), 359–404.

Dal Bó, Ernesto and Pedro Dal Bó, "Workers, Warriors, and Criminals: Social Conflict in General Equilibrium," *Journal of the European Economic Association*, 2011, *9* (4), 646–677.

———, **Frederico Finan, and Martín A. Rossi**, "Strengthening State Capabilities: The Role of Financial Incentives in the Call to Public Service," *Quarterly Journal of Economics*, 2013, *128* (3), 1169–1218.

———, **Karolina Hutková, Lukas Leucht, and Noam Yuchtman**, "Dissecting the Sinews of Power: International Trade and the Rise of Britain's Fiscal-Military State, 1689–1823," *Journal of Economic History*, 2025, *85* (2), 336–369.

David, Géraldine, Yuexin Li, Kim Oosterlinck, and Luc Renneboog, "Art in Times of Crisis," *Economic History Review*, 2024, *77* (4), 1362–1413.

Davis, Lance E. and Robert A. Huttenback, "The Political Economy of British Imperialism: Measures of Benefits and Support," *Journal of Economic History*, 1982, *42* (1), 119–130.

——— **and** ———, *Mammon and the Pursuit of Empire: The Political Economy of British Imperialism, 1860–1912*, Cambridge: Cambridge University Press, 1986.

de Chaisemartin, Clément and Xavier D'Haultfœuille, "Difference-in-Differences Estimators of Intertemporal Treatment Effects," *Review of Economics and Statistics*, 2026, *108* (4), 863–880.

Dell, Melissa, "The Persistent Effects of Peru's Mining *Mita*," *Econometrica*, 2010, *78* (6), 1863–1903.

——— **and Benjamin A. Olken**, "The Development Effects of the Extractive Colonial Economy: The Dutch Cultivation System in Java," *Review of Economic Studies*, 2020, *87* (1), 164–203.

Dincecco, Mark and Mauricio Prado, "Warfare, Fiscal Capacity, and Performance," *Journal of Economic Growth*, 2012, *17* (3), 171–203.

Dube, Arindrajit, Daniele Girardi, Òscar Jordà, and Alan M. Taylor, "A Local Projections Approach to Difference-in-Differences," *Journal of Applied Econometrics*, 2025, *40* (7), 741–758.

Dube, Oeindrila and Juan F. Vargas, "Commodity Price Shocks and Civil Conflict: Evidence from Colombia," *Review of Economic Studies*, 2013, *80* (4), 1384–1421.

Eggers, Andrew C. and Jens Hainmueller, "MPs for Sale? Returns to Office in Postwar British Politics," *American Political Science Review*, 2009, *103* (4), 513–533.

Engels, Friedrich, "The British Army in India," *New-York Daily Tribune*, 26 June 1858. Reprinted in *Marx & Engels Collected Works*, vol. 15, pp. 556–559.

Euwe, Jeroen and Kim Oosterlinck, "The German Art Market during WW II," *European Review of Economic History*, 2023, *27* (3), 412–436.

Fenske, James and Hans-Joachim Voth, "Conflict in Economic History," in Massimo Morelli, Debraj Ray, and Oeindrila Dube, eds., *Handbook of the Economics of Conflict*, Vol. 1, Amsterdam: Elsevier, 2024, pp. 105–163.

Finan, Frederico, Benjamin A. Olken, and Rohini Pande, "The Personnel Economics of the Developing State," in Abhijit Vinayak Banerjee and Esther Duflo, eds., *Handbook of Economic Field Experiments*, Vol. 2, Amsterdam: North-Holland, 2017, pp. 467–514.

Finn, Margot C., "Material Turns in British History: I. Loot," *Transactions of the Royal Historical Society*, 2018, *28*, 5–32.

Fisman, Raymond and Shang-Jin Wei, "The Smuggling of Art, and the Art of Smuggling: Uncovering the Illicit Trade in Cultural Property and Antiques," *American Economic Journal: Applied Economics*, 2009, *1* (3), 82–96.

Gallagher, John and Ronald Robinson, "The Imperialism of Free Trade," *Economic History Review*, 1953, *6* (1), 1–15.

Gibbons, Robert, "Incentives Between Firms (and Within)," *Management Science*, 2005, *51* (1), 2–17.

——— **and John Roberts**, "Introduction," in Robert Gibbons and John Roberts, eds., *The Handbook of Organizational Economics*, Princeton: Princeton University Press, 2013, pp. 1–8.

Glick, Reuven and Alan M. Taylor, "Collateral Damage: Trade Disruption and the Economic Impact of War," *Review of Economics and Statistics*, 2010, *92* (1), 102–127.

Goodman-Bacon, Andrew, "Difference-in-Differences with Variation in Treatment Timing," *Journal of Econometrics*, 2021, *225* (2), 254–277.

Gourieroux, Christian, Alain Monfort, and Alain Trognon, "Pseudo Maximum Likelihood Methods: Applications to Poisson Models," *Econometrica*, 1984, *52* (3), 701–720.

Grout, Nikki, "Museum Correspondences: Social, Material, and Conceptual Relations between the British Museum and Nigerian Antiquities Service, c.1945–1970." PhD dissertation, University of Brighton 2022.

Guardado, Jenny, "Office-Selling, Corruption, and Long-Term Development in Peru," *American Political Science Review*, 2018, *112* (4), 971–995.

Harries-Jenkins, Gwyn, *The Army in Victorian Society*, London: Routledge & Kegan Paul, 1977.

Hay, Denys, "The Division of the Spoils of War in Fourteenth-Century England," *Transactions of the Royal Historical Society*, 1954, *4*, 91–109.

Heblich, Stephan, Stephen J. Redding, and Hans-Joachim Voth, "Slavery and the British Industrial Revolution," Working Paper 30451, National Bureau of Economic Research 2022.

Hevia, James L., *English Lessons: The Pedagogy of Imperialism in Nineteenth-Century China*, Durham, NC: Duke University Press, 2003.

Hicks, Dan, *The Brutish Museums: The Benin Bronzes, Colonial Violence and Cultural Restitution*, London: Pluto Press, 2020.

Hill, Katrina, "Complicated Objects: Artifacts from the Yuanming Yuan in Victorian Britain." PhD dissertation, University of Glasgow 2023.

Hillmann, Henning and Christina Gathmann, "Overseas Trade and the Decline of Privateering," *Journal of Economic History*, 2011, *71* (3), 730–761.

HM Courts and Tribunals Service, "Search probate records for documents and wills (England and Wales)," 2025. Scanned calendars of the Principal Probate Registry, 1858–1996. Contains public sector information licensed under the Open Government Licence v3.0. https://probatesearch.service.gov.uk. Accessed 2025.

Hobson, J. A., *Imperialism: A Study*, London: James Nisbet, 1902.

Hoffman, Philip T., *Why Did Europe Conquer the World?*, Princeton: Princeton University Press, 2015.

Holmström, Bengt and Paul Milgrom, "Multitask Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design," *Journal of Law, Economics, and Organization*, 1991, *7* (Special Issue), 24–52.

Hugenholtz, Liesbeth, "Historical Art Sales Catalogues and the IDC Lugt Project," *Art Libraries Journal*, 2004, *29* (2), 28–32.

Hugo, Victor, *Actes et paroles: Pendant l'exil, 1852–1870*, Paris: Michel Lévy frères, 1875. Letter to Captain Butler, Hauteville House, 25 November 1861.

Huillery, Elise, "The Black Man's Burden: The Cost of Colonization of French West Africa," *Journal of Economic History*, 2014, *74* (1), 1–38.

International Peace Conference, "Hague Convention (II) with Respect to the Laws and Customs of War on Land," 1899. Text via Avalon Project, Lillian Goldman Law Library, Yale Law School; accessed 20 May 2026.

Jaques, Tony, *Dictionary of Battles and Sieges: A Guide to 8,500 Battles from Antiquity through the Twenty-First Century*, Westport, CT: Greenwood Press, 2007.

Jasanoff, Maya, *Edge of Empire: Lives, Culture, and Conquest in the East, 1750–1850*, New York: Knopf, 2005.

Johnson, Noel D. and Mark Koyama, "Tax Farming and the Origins of State Capacity in England and France," *Explorations in Economic History*, 2014, *51*, 1–20.

Khan, Adnan Q., Asim I. Khwaja, and Benjamin A. Olken, "Making Moves Matter: Experimental Evidence on Incentivizing Bureaucrats through Performance-Based Postings," *American Economic Review*, 2019, *109* (1), 237–270.

Kimbrough, Erik O., Kevin Laughren, and Roman M. Sheremeta, "War and Conflict in Economics: Theories, Applications, and Recent Trends," *Journal of Economic Behavior & Organization*, 2020, *178*, 998–1013.

Kremer, Michael and Tom Wilkening, "Protecting Antiquities: A Role for Long-Term Leases?," *Journal of Economic Perspectives*, 2025, *39* (3), 127–148.

Lavery, Brian, *Nelson's Navy: The Ships, Men and Organisation, 1793–1815*, London: Conway Maritime Press, 1989.

Lebow, Richard Ned, *Why Nations Fight: Past and Future Motives for War*, Cambridge: Cambridge University Press, 2010.

Lee, David S., "Training, Wages, and Sample Selection: Estimating Sharp Bounds on Treatment Effects," *Review of Economic Studies*, 2009, *76* (3), 1071–1102.

Lewis, Michael, *A Social History of the Navy, 1793–1815*, London: George Allen & Unwin, 1960.

Lidchi, Henrietta, "Reappraising Expropriations: A Clarification on Colonial Rationales Linked to the Collections Arising from the Attack on Benin City in 1897," *Museum Worlds: Advances in Research*, 2022, *10* (1), 170–180.

——— **and Stuart Allan**, *Dividing the Spoils: Perspectives on Military Collections and the British Empire*, Manchester: Manchester University Press, 2020. Studies in Imperialism.

Livy, "Ab Urbe Condita: Book XXXIV," The Latin Library, n.d. Latin text, 34.9.12. Accessed 18 September 2026.

London Gazette, "Banda and Kirwee Prize Money (Saugor Field Force): First Distribution," no. 23328, p. 6525, 29 November 1867.

Longair, Sarah and John McAleer, "Introduction: Curating Empire: Museums and the British Imperial Experience," in Sarah Longair and John McAleer, eds., *Curating Empire: Museums and the British Imperial Experience*, Manchester: Manchester University Press, 2012, pp. 1–16.

Lowes, Sara and Eduardo Montero, "Concessions, Violence, and Indirect Rule: Evidence from the Congo Free State," *Quarterly Journal of Economics*, 2021, *136* (4), 2047–2091.

Lugt, Frits, *Répertoire des catalogues de ventes publiques intéressant l'art ou la curiosité*, The Hague and Paris: Martinus Nijhoff and Fondation Custodia, 1938. Four volumes, 1938–1987, covering sales from 1600 to 1925.

MacDonald, Isobel, "Counting When, Who and How: Visualizing the British Museum's History of Acquisition through Collection Data, 1753–2019," *Journal of the History of Collections*, 2023, *35* (2), 305–320.

MacKenzie, John M., *Museums and Empire: Natural History, Human Cultures and Colonial Identities*, Manchester: Manchester University Press, 2009. Studies in Imperialism.

McCausland, Shane, *First Masterpiece of Chinese Painting: The Admonitions Scroll*, London: British Museum Press, 2003.

Miller, Charles and K. Shuvo Bakar, "Conflict Events Worldwide Since 1468BC: Introducing the Historical Conflict Event Dataset," *Journal of Conflict Resolution*, 2023, *67* (2–3), 522–554.

Mullahy, John and Edward C. Norton, "Why Transform Y? The Pitfalls of Transformed Regressions with a Mass at Zero," *Oxford Bulletin of Economics and Statistics*, 2024, *86* (2), 417–447.

Myatt, Tim, "Trinkets, Temples, and Treasures: Tibetan Material Culture and the 1904 British Mission to Tibet," *Revue d'Études Tibétaines*, 2011, *21*, 123–153.

———, "Looting Tibet: Conflicting Narratives and Representations of Tibetan Material Culture from the 1904 British Mission to Tibet," *Inner Asia*, 2012, *14* (1), 61–98.

National Archives of Ireland, "Calendars of Wills and Administrations, 1858–1920," 2026. Scanned calendars of the Principal Registry, Dublin, and the district registries. https://willcalendars.nationalarchives.ie, since retired. Accessed 2026.

National Records of Scotland, "ScotlandsPeople: Wills and testaments, 1513–1925," 2026. Indexed images of Scottish wills, testaments, and inventories confirmed by the commissary and sheriff courts. https://www.scotlandspeople.gov.uk. Accessed 2026.

Nicholas, Lynn H., *The Rape of Europa: The Fate of Europe's Treasures in the Third Reich and the Second World War*, New York: Alfred A. Knopf, 1994.

Nunn, Nathan, "The Long-Term Effects of Africa's Slave Trades," *Quarterly Journal of Economics*, 2008, *123* (1), 139–176.

O'Brien, Patrick K., "The Costs and Benefits of British Imperialism 1846–1914," *Past & Present*, 1988, *120* (1), 163–200.

Offer, Avner, "The British Empire, 1870–1914: A Waste of Money?," *Economic History Review*, 1993, *46* (2), 215–238.

Oosterlinck, Kim, "Art as a Wartime Investment: Conspicuous Consumption and Discretion," *Economic Journal*, 2017, *127* (607), 2665–2701.

Parliamentary Papers, "Prize Money in India—Question," Hansard, House of Commons, 3rd ser., vol. 159, cols. 1531–1533, 6 July 1860. https://api.parliament.uk/historic-hansard/commons/1860/jul/06/prize-money-in-india-question.

———, "Vote of Thanks—(China)—Resolutions," Hansard, House of Lords, 3rd ser., vol. 161, cols. 366–393, 14 February 1861. https://api.parliament.uk/historic-hansard/lords/1861/feb/14/vote-of-thanks-china-resolutions.

———, "Army—India—Kirwee Prize Money," Hansard, House of Commons, 3rd ser., vol. 201, cols. 1524–1551, 27 May 1870. https://api.parliament.uk/historic-hansard/commons/1870/may/27/army-india-kirwee-prize-money.

———, "Abyssinian War—Prize—The Abana's Crown and Chalice," Hansard, House of Commons, 3rd ser., vol. 207, cols. 939–952, 30 June 1871. https://api.parliament.uk/historic-hansard/commons/1871/jun/30/motion-for-an-address.

———, "Army Regulation Bill, Second Reading, Adjourned Debate," Hansard, House of Commons, 3rd ser., vol. 204, cols. 1877–1967, 13 March 1871. https://api.parliament.uk/historic-hansard/commons/1871/mar/13/adjourned-debate.

Parrillo, Nicholas R., *Against the Profit Motive: The Salary Revolution in American Government, 1780–1940*, New Haven: Yale University Press, 2013.

Parrott, David, *The Business of War: Military Enterprise and Military Revolution in Early Modern Europe*, Cambridge: Cambridge University Press, 2012.

Patrizio Gunning, Lucia and Debbie Challis, "Planned Plunder, the British Museum, and the 1868 Maqdala Expedition," *Historical Journal*, 2023, *66* (3), 550–572.

Querubín, Pablo and James M. Snyder Jr., "The Control of Politicians in Normal Times and Times of Crisis: Wealth Accumulation by U.S. Congressmen, 1850–1880," *Quarterly Journal of Political Science*, 2013, *8* (4), 409–450.

Rawson, Geoffrey, *Life of Admiral Sir Harry Rawson*, London: Edward Arnold, 1914.

Ray, Debraj and Joan Esteban, "Conflict and Development," *Annual Review of Economics*, 2017, *9*, 263–293.

Redlich, Fritz, *De Praeda Militari: Looting and Booty, 1500–1815*, Wiesbaden: Franz Steiner Verlag, 1956. Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte, Beiheft 39.

République française, "Loi No. 2026-351 du 9 mai 2026 relative à la restitution de biens culturels ayant fait l'objet d'une appropriation illicite," 2026. Journal officiel de la République française, 10 May 2026. https://www.legifrance.gouv.fr/eli/loi/2026/5/9/2026-351/jo/texte.

Robertson, Geoffrey, *Who Owns History? Elgin's Loot and the Case for Returning Plundered Treasure*, London: Biteback, 2019.

Rodger, N. A. M., *The Command of the Ocean: A Naval History of Britain, 1649–1815*, London: Penguin, 2006.

Royal Irish Academy, "Dictionary of Irish Biography," 2026. Open-access online edition. https://www.dib.ie. Accessed 2026.

Saltzman, Cynthia, *Plunder: Napoleon's Theft of Veronese's Feast*, New York: Farrar, Straus and Giroux, 2021.

Sánchez de la Sierra, Raúl, "On the Origins of the State: Stationary Bandits and Taxation in Eastern Congo," *Journal of Political Economy*, 2020, *128* (1), 32–74.

Sandholtz, Wayne, *Prohibiting Plunder: How Norms Change*, New York: Oxford University Press, 2007.

Santos Silva, J. M. C. and Silvana Tenreyro, "The Log of Gravity," *Review of Economics and Statistics*, 2006, *88* (4), 641–658.

Sarr, Felwine and Bénédicte Savoy, "The Restitution of African Cultural Heritage: Toward a New Relational Ethics," Report to the French Ministry of Culture, 2018.

Savoy, Bénédicte, *Africa's Struggle for Its Art: History of a Postcolonial Defeat*, Princeton: Princeton University Press, 2022.

Second International Peace Conference, "Hague Convention (IV) Respecting the Laws and Customs of War on Land," 1907. Text via Avalon Project, Lillian Goldman Law Library, Yale Law School; accessed 20 May 2026.

Silverman, Debora L., "Diasporas of Art: History, the Tervuren Royal Museum for Central Africa, and the Politics of Memory in Belgium, 1885–2014," *Journal of Modern History*, 2015, *87* (3), 615–667.

Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of Nations*, London: W. Strahan and T. Cadell, 1776.

Spiers, Edward M., *The Army and Society, 1815–1914*, London: Longman, 1980.

———, "Spoils of War: Custom and Practice," in Henrietta Lidchi and Stuart Allan, eds., *Dividing the Spoils: Perspectives on Military Collections and the British Empire*, Manchester: Manchester University Press, 2020, pp. 19–38.

Stahn, Carsten, *Confronting Colonial Objects: Histories, Legalities, and Access to Culture*, Oxford: Oxford University Press, 2023.

Stevenson, Alice, *Scattered Finds: Archaeology, Egyptology and Museums*, London: UCL Press, 2019.

Strachan, Hew, *Wellington's Legacy: The Reform of the British Army, 1830–54*, Manchester: Manchester University Press, 1984.

Sun, Liyang and Sarah Abraham, "Estimating Dynamic Treatment Effects in Event Studies with Heterogeneous Treatment Effects," *Journal of Econometrics*, 2021, *225* (2), 175–199.

Thomas, Desmond, "A Regimental Culture of Collecting," in Henrietta Lidchi and Stuart Allan, eds., *Dividing the Spoils: Perspectives on Military Collections and the British Empire*, Manchester: Manchester University Press, 2020, pp. 162–184.

Tilly, Charles, *Coercion, Capital, and European States, AD 990–1990*, Oxford: Basil Blackwell, 1990.

Turner, John D., "Wealth Concentration in the European Periphery: Ireland, 1858–2001," *Oxford Economic Papers*, 2010, *62* (4), 625–646.

Tythacott, Louise, *Collecting and Displaying China's "Summer Palace" in the West: The Yuanmingyuan in Britain and France*, London: Routledge, 2018a.

———, "Exhibiting and Auctioning Yuanmingyuan ('Summer Palace') Loot in 1860s and 1870s London: The Elgin and Negroni Collections," *Journal for Art Market Studies*, 2018b, *2* (3).

Van der Kraan, Alfons, "Selaparang under Balinese and Dutch Rule: A History of Lombok 1870–1940." PhD dissertation, Australian National University 1976.

Voigtländer, Nico and Hans-Joachim Voth, "Gifts of Mars: Warfare and Europe's Early Rise to Riches," *Journal of Economic Perspectives*, 2013, *27* (4), 165–186.

Voth, Hans-Joachim and Guo Xu, "Discretion and Destruction: Promotions, Performance, and Patronage in the Royal Navy," 2022. Working paper, February 2022. An earlier version circulated as "Patronage for Productivity: Selection and Performance in the Age of Sail," CEPR Discussion Paper 13963, 2019.

Wang, Jiqing, "Stein and Chinese Officials at Dunhuang," *IDP News (International Dunhuang Project)*, 2007, *30*, 2–4.

Watt, Patrick, "'Ashantee Loot is Unique': British Military Culture and the Taking of Objects in the Third Anglo-Asante War, 1873–1874," *British Journal for Military History*, 2023, *9* (3), 21–40.

Williamson, Jeffrey G., "The Structure of Pay in Britain, 1710–1911," *Research in Economic History*, 1982, *7*, 1–54.

Wolseley, Garnet, *The Soldier's Pocket-Book for Field Service*, 5th ed., London: Macmillan, 1886.

Wood, Andrew B., "The Limits of Social Mobility: Social Origins and Career Patterns of British Generals, 1688–1815." PhD dissertation, London School of Economics 2011.

Xu, Guo, "The Costs of Patronage: Evidence from the British Empire," *American Economic Review*, 2018, *108* (11), 3170–3198.

Yule, Henry and Arthur Coke Burnell, *Hobson-Jobson: Being a Glossary of Anglo-Indian Colloquial Words and Phrases, and of Kindred Terms; Etymological, Historical, Geographical, and Discursive*, London: John Murray, 1886.

Appendix A Additional Historical Background

This appendix expands the institutional background summarized in Section 2. The empirical analysis links British-involved battles to artifact acquisitions recorded in the British Museum catalog, so the material collected here has three tasks. First, it explains why the British Museum catalog is an informative, though incomplete, measure of artifact flows into Britain. Second, it describes how nineteenth-century battles could move objects from battlefields, palaces, treasuries, temples, archives, and private collections into British official and private channels. Third, it explains why these flows mattered not only to museums and collectors, but also to officers, regiments, and the military institutions that governed prize and promotion.

I organize the discussion around the empirical concerns that arise in the paper. I use the British Museum as a repeated institutional trace of a broader extractive process rather than as its full record; I treat battles as events that could change access, control, possession, legal title, market circulation, and curatorial attention, rather than only as episodes of combat; and I do not use looting as a blanket label for every artifact in the data. The key question is whether British military events shifted the probability that objects from affected places entered British hands and, through multiple channels, appeared in a major British collecting institution.

A.1 The British Museum and Its Catalog

Institutional starting point. Parliament created the British Museum by the Act of 7 June 1753, paid for its founding collections with the proceeds of a state lottery that raised £95,194, and opened it on 15 January 1759 (Caygill, 2002, pp. 8, 11, 15). The core was Sir Hans Sloane's cabinet of 79,575 objects together with his library and natural-history specimens (Caygill, 2002, p. 10), and the Museum's own historian describes it as "the first national, public and secular museum in the world" (Caygill, 2002, p. 7). In this early form the Museum was an Enlightenment institution, a national repository for classifying and displaying knowledge about the world. The nineteenth century changed both the scale and the geography of the collection. Acquisitions in the current collection rise from 17,500 artifacts in the 1820s to 209,600 in the 1880s, and the 1880s and 1890s were the largest collecting decades before the twentieth century (MacDonald, 2023, p. 307). British museums "consistently relied on British maritime and imperial endeavours for the acquisition of objects relating to different cultures from around the world" (Longair and McAleer, 2012, p. 2). By 1850 the antiquities of ancient Britain and Gaul fitted into four cases in one room, and Augustus Franks was appointed in 1851 as the first curator with specific responsibility for

British and medieval material (Caygill, 2002, pp. 34, 45).

Imperial collecting networks. The British Museum was one node in a broader network of imperial collection rather than the sole destination for objects removed from colonized or conquered places. Country houses, regimental museums, officers' messes, the Royal United Services Institution, the Ashmolean, the South Kensington Museum, the Pitt Rivers Museum, the National Army Museum, and private London collections all stored campaign-acquired material. Finn (2018, 2019, 2021) document the circulation of Indian loot and diplomatic "gifts" through the East India Company's *toshkhana* system and through country-house collections. Lidchi and Allan (2020) similarly treat military collections as a distinct imperial collecting ecology, tracing trophies, mess objects, regimental collections, and Yuanmingyuan material across military and public institutions. Many objects did not enter the British Museum immediately. They could be retained by officers, sold through dealers, transferred to other public museums, inherited by descendants, or reappear in the art market decades later.

Why the catalog is useful. The British Museum catalog is useful because it records repeated information on acquisition year, acquisition source, object type, material, production place, find spot, and provenance. The source fields are especially important for this project because they identify the actors through whom wartime objects moved: government offices, military personnel, auction houses, dealers, curators, colonial officials, missionaries, diplomats, and private collectors. The database therefore allows the paper to link artifacts to places and years, and to distinguish among acquisition channels. In the empirical analysis, I scrape and parse the catalog, geolocate artifacts to cities and grid cells, and aggregate acquisitions by place and year. This transforms individual accession records into a panel that can be matched to British-involved battles.

Records, acquisition policy, and display. The Trustees kept a dated register of gifts, the "Book of Presents," from 1757 (Caygill, 2002, p. 17). Departments compiled inventories of their holdings from 1837, and the modern register records each artifact's transaction under one of sixteen acquisition labels, from "donated by" and "purchased from" to "division of finds" and "transferred from," with earlier owners listed where known (MacDonald, 2023, pp. 308, 311). Catalogue series begun in the nineteenth century were still unfinished in 2002 (Caygill, 2002, p. 8). The Museum had no regular purchase grant at first and relied on donors and on special applications to Parliament (Caygill, 2002, p. 17). Asked by the 1835 Select Committee whether the Museum existed to house bequeathed collections or to form "one great collection which shall be beneficial to science and literature," the principal librarian Henry Ellis answered that "the first object of the museum is to preserve these collections

for posterity" (MacDonald, 2023, p. 310). A purchase required a case from the Museum's officers and funds voted by the Trustees, and the Trustees could refuse gifts (MacDonald, 2023, p. 311). Antonio Panizzi, principal librarian from 1856 to 1866, objected to space "taken up by Esquimaux dresses, canoes and hideous feather idols," and the Trustees agreed that no purchase money should go to ethnography (Caygill, 2002, pp. 36, 40). Display followed the same hierarchy. A guidebook of 1850 complained that for China and Japan "all that can be assigned are five paltry cases" (Masson, 1850, p. 22), and an official Museum guide of the period gave three pages to prehistoric and ethnographic material against 144 pages to Egyptian and 129 to classical antiquities (Caygill, 2002, p. 34).

What the catalog does not measure. The catalog is not a census of the objects British forces took. Many objects removed during military campaigns never entered the British Museum: some remained in private houses, regimental museums, colonial institutions, officers' messes, local collections, or other metropolitan museums, and some were destroyed, dispersed, sold abroad, or retained in families. Conversely, the Museum bought, received as gifts, exchanged, excavated, or inherited many of its artifacts through ordinary collecting channels. The empirical claim is therefore testable: British battles could change the flow of objects into British hands, and the catalog provides a large, systematic, lower-bound record of part of that flow. The claim is neither that every artifact in the catalog was looted nor that everything taken in war reached Bloomsbury.

Measurement and identification. This measurement interpretation matters for identification. If the British Museum captured a roughly stable share of battle-induced artifact flows, then the catalog can be read as a proxy for those flows. If the share fluctuated over time, year fixed effects absorb common changes in Museum-wide collecting and documentation intensity. If some places were persistently more likely to generate museum artifacts because of their material culture, archaeological visibility, accessibility, or integration into imperial markets, location fixed effects absorb those differences. The empirical analysis also uses more restrictive outcomes: artifacts with precise geography, military-linked acquisition sources, alternative spatial units, and samples excluding major countries or iconic cases. These checks treat the catalog as a selective but structured trace, without assuming it complete.

Deaccession and the stability of the collection. A separate concern is whether the catalog records the objects that actually entered the British Museum during the relevant period, or whether large-scale disposal later erased important parts of the historical record. This is unlikely to eliminate the main signal. The British Museum's legal regime has long constrained disposal, and modern deaccession policy allows removal only under limited statu-

tory conditions.[86] Some artifacts did leave the collection and registration was imperfect, but the extreme concern, that the British Museum systematically sold off whole categories of imperial artifacts in a way that would destroy the battle-acquisition relationship, is implausible. The catalog should still be read as incomplete, but incompleteness mostly pushes the interpretation toward a lower-bound estimate. The bar on disposal is older than the 1963 Act. Sloane's trustees put to Parliament in 1753 that "the collection should be preserved entire" (Caygill, 2002, p. 10), and in 1934 a Keeper stated publicly that "The Trustees have no power to sell any object under their charge" (Caygill, 2002, p. 56). The 1963 Act reduced the Board from 51 to 25 Trustees, permitted loans abroad and off-site storage, and separated the natural-history collections (Caygill, 2002, pp. 61–62), while restating the prohibition on disposal (Savoy, 2022, p. 6).

Why the nineteenth century. The nineteenth century is the natural period in which to study this relationship. It was the period in which British imperial warfare, overseas occupation, museum expansion, antiquarian collecting, auction markets, and colonial administration most strongly overlapped. The empirical analysis focuses on 1816–1913, after the Napoleonic Wars and before the First World War. This window avoids combining the main nineteenth-century imperial-war setting with the earlier eighteenth-century and Napoleonic military environment. It also reflects the data: eighteenth-century British Museum acquisitions are relatively sparse for the purposes of this project, while including pre-1816 battles would add many conflicts without comparable acquisition variation. The full construction of the sample is described in Section 3.

Ordinary collecting versus battle-induced collecting. The distinction between ordinary collecting and battle-induced collecting is central. Scholarly excavation, commercial purchase, and private donation could all produce Museum acquisitions in the absence of war. But the empirical design asks whether acquisitions rose after British battles, and whether the timing and source composition of those acquisitions look like wartime extraction rather than slow scholarly accumulation. If post-battle inflows were driven primarily by planned archaeological expeditions unrelated to military campaigns, one would expect gradual acquisition profiles. By contrast, direct seizure, military auctions, government allocations, and coerced gifts predict concentrated post-battle spikes followed by delayed secondary-market flows. The design uses this timing.

The catalog and the restitution debate. The catalog is also the subject of a restitution debate. France has returned royal treasures to Benin and a saber to Senegal following

[86] British Museum, "Deaccession Policy," 2024, https://www.britishmuseum.org/sites/default/files/2024-07/Deaccession-policy-2024.pdf.

President Macron's 2017 Ouagadougou pledge and the Sarr–Savoy report, and in May 2026 adopted a general framework for returning objects taken under colonial rule.[87] Britain has moved in the opposite direction: the British Museum Act 1963 restricts deaccessioning, and successive governments have refused even emblematic requests. The Museum declined to lend the Queen Idia ivory mask to Nigeria for the 1977 Lagos festival (Savoy, 2022, p. 63), and its director published a defense of the institution against the charge of neo-imperialism in 1989 (Coombes, 1994; Wilson, 1989). The Museum's own anniversary history narrates two and a half centuries of acquisition using the word empire once, for the title of a 1924 exhibition, and the word loot not at all (Caygill, 2002, p. 55). When declining to return the Koh-i-Noor, Prime Minister David Cameron argued that accepting one return would make the whole collection appear vulnerable to deaccessioning.[88] The Sarr–Savoy report estimated that nearly all of sub-Saharan Africa's material heritage sits outside the continent. The financial stakes are visible alongside the cultural ones: a bronze horse-head removed from the Yuanmingyuan later sold for $8.9 million.[89] These controversies make the catalog more than an administrative record: it is an empirical trace of the historical process whose scale and beneficiaries the paper measures (Sarr and Savoy, 2018).

A.2 Prize, Legality, and the Channels from Battle to Museum

Battles as access shocks. British battles could affect museum acquisitions because they changed access and control. A victory could open royal palaces, treasuries, temples, shrines, archives, libraries, elite residences, arsenals, and stores of portable wealth to British soldiers and officials. Occupation or post-conflict political control could extend that access beyond the moment of combat. Objects might then move through several channels: direct seizure, official allocation, prize committees, military auctions, diplomatic pressure, private sale, dealer resale, or later bequest. In this sense, a battle shocked the ownership, visibility, and marketability of local material culture, and not only the military balance.

Contestation and stakes. Looting was neither hidden nor uncontested. Gladstone's reaction to the Magdala regalia, later debates over the Koh-i-Noor, and contemporary restitution claims around Benin, Magdala, Asante, and the Yuanmingyuan all show that contemporaries and source societies understood the cultural and financial stakes of removal. These controversies show that the objects in question were valuable and politically salient: royal regalia, sacred objects, manuscripts, palace bronzes, weapons, and gold ornaments whose removal

[87] *Le Monde*, 8 May 2026, https://www.lemonde.fr/en/culture/article/2026/05/08/france-passes-law-on-the-restitution-of-cultural-artifacts-looted-during-colonial-rule_6753247_30.html.

[88] BBC News, 29 July 2010, https://www.bbc.co.uk/news/uk-politics-10802469.

[89] BBC News, 1 December 2020, https://www.bbc.co.uk/news/world-asia-china-55154918.

carried symbolic as well as monetary value (Sarr and Savoy, 2018; Savoy, 2022; Hicks, 2020).

Prize as an institution. Prize institutions made the conversion of seizure into property possible. The regime governing battlefield appropriation during the nineteenth century was a blurring of authority across Crown forces, chartered companies, prize courts, the Foreign Office, the War Office, the Admiralty, the India Office, and public museums, rather than a single coherent legal apparatus. The same expedition could be described simultaneously as a military operation, a diplomatic intervention, a commercial venture, a punitive expedition, and a curatorial collecting opportunity. This overlap mattered because each role lent legitimacy to the others. A soldier's seizure could become prize, and prize could become an auction lot. An auction lot could become a private collection. A private collection could become a museum donation.

Naval prize and army prize. The two main military property regimes were naval prize and army prize. Naval prize ran through the Admiralty Court, which condemned ships and cargoes, distributed shares according to prize rules, and published notices in the *London Gazette*. This regime was statutory, reviewable, and relatively predictable: a municipal-law system adapted to naval warfare, neither piracy nor a neutral international tribunal (Aldous, 2020; Petrie, 1999). Army prize was more ad hoc. Land booty was distributed by Royal Warrant or campaign-specific procedures. Where no formal warrant existed, commanders and soldiers relied on prize agents, regimental auctions, individual trophy retention, informal sale, or later government allocation. This distinction helps explain why the paper uses Gazette prize notices for one part of the analysis while also emphasizing less formal channels for army campaigns.

Royal warrants and land booty. Army prize did exist, but it was irregular. Royal Warrants were issued for only some campaigns, including Bharatpur, Ghuznee, Hyderabad/Sindh, Mooltan, and the Mutiny funds. Delhi in 1857 is a particularly useful case because it generated a large prize pot distributed across the regiments present, leaving a trace in military careers and promotion incentives. In other campaigns, seizure was not formalized by a Royal Warrant. Objects could instead be sold in the field, retained by officers, transferred to government custody, or later described as gifts or purchases. Where no Royal Warrant was issued, extraction often moved through less standardized channels. The Sindh warrant shows the scale a single commander's share could reach. Charles Napier took about £68,000 from the treasure of the Amirs of Sindh, which the army captured at Hyderabad after the battles of Miani and Hyderabad in 1843.[90]

[90]The sum was Napier's commander's eighth of the prize money, not a payment from the East India Company. The Crown granted the captured booty to the army by royal warrant on 11 November 1845

The procedure in Wolseley's *Pocket-Book*. No army regulation described how booty was to be handled. Wolseley's *Soldier's Pocket-Book for Field Service*, first published in 1869 and in its fifth edition by 1886, supplied the procedure because, in his words, "no orders on the subject are to be found in our regulations" (Wolseley, 1886). Booty "legally belongs to the Crown" and was not to be distributed without the Sovereign's sanction. When a capture was expected, the general commanding had the officers elect two or three prize agents, and every regiment, battalion, and department present sent prize rolls to the Adjutant-General at the War Office. The general then decided whether to sell the booty by auction on the spot or send it home for sale. The prize agents paid the balance to the Treasurer of Chelsea Hospital, who distributed it by a scale the Treasury had approved but never published as an order. Shares followed daily pay, one for a private and 400 for a general, and the general commanding took 5 percent of the fund. The same manual told officers to repress plundering and marauding as "highly disgraceful to soldiers."

The state as facilitator. Rather than simply prohibiting looting, the state in many settings disciplined, centralized, monetized, and distributed the proceeds of war. Parliamentary debates over Kirwee prize money, for example, discussed spoil, plunder, and the division of material taken from the Yuanmingyuan in Beijing. One argument for regulated prize distribution was that it preserved discipline: soldiers who expected a share of captured property were less likely to engage in uncontrolled plunder (Parliamentary Papers, 1870). By regulating prize, the state recorded what was seized and divided the proceeds among the forces.

Legal change and decline. The legal environment changed over the period. On land, the Cardwell reforms of 1870–71 abolished commission purchase and replaced a residual-claimant career path with salaried promotion. This matters because it terminates the rank-purchase mechanism used in the later officer analysis (Bruce, 1980). Internationally, the Hague Regulations of 1899 and 1907 codified prohibitions on pillage and protections for religious, charitable, educational, artistic, and scientific institutions. Article 47 of the 1907 Regulations prohibited pillage; Article 56 protected historic monuments and works of art and science (International Peace Conference, 1899; Second International Peace Conference, 1907). These legal changes are important benchmarks, but they do not mean that the baseline sample ends because looting suddenly became illegal in 1914. Rather, the First World War marks a broader break in the scale, geography, and administration of British

and the Company distributed it as trustee in 1848 and 1849, and Napier's own affidavit records receipts of £68,000 (Court of Queen's Bench, 1852). The Company's directors, who had opposed the conquest, first tried to retain the booty and then to halve Napier's share to a sixteenth, and the Lords of the Treasury overruled them (Napier, 1851). The figure of £70,000 that circulates comes from a hostile claim made in the Commons before any distribution had been paid.

warfare.

Four routes into Western museums. Drawing on histories of colonial collecting, I organize the routes by which imperial objects entered Western museums into four non-exhaustive categories (Stahn, 2023; Lidchi and Allan, 2020). The first is *official loot and punitive expeditions*, in which the state allocated material from a sanctioned campaign to national collections: after the 1897 Benin expedition the Foreign Office transferred royal-court bronzes to the British Museum within a year (Hicks, 2020), while at Magdala (Ethiopia) in 1868 one of the British Museum's staff accompanied Napier's army and acquired manuscripts and regalia at the army's sale of loot (Patrizio Gunning and Challis, 2023). The second is *private sale and dispersal*, in which material retained by participants passed through military auctions, dealers, and private collections before reaching a museum, as with objects from the 1860 Yuanmingyuan plunder, the largest single transfer of Chinese imperial art into European hands, sold in more than 1,300 lots and through twenty-two London auctions over the following decades (Tythacott, 2018a,b). The third is *coerced cession and diplomatic extraction*, in which objects ceded under indemnities or unequal settlements entered the record as gifts or purchases, as with the gold regalia the Asante gave up to meet the indemnity imposed by the 1874 Treaty of Fomena (Stahn, 2023, pp. 150–151) and the Koh-i-Noor, which the ten-year-old Maharaja of the Sikh Empire surrendered to Queen Victoria after the 1849 annexation of Punjab (Dalrymple and Anand, 2017). The fourth operated *in the name of science*, as imperial power opened territory to excavation and scholarly collecting: the Egypt Exploration Fund distributed finds to subscribing museums (Stevenson, 2019), and Aurel Stein's Central Asian expeditions carried Silk Road antiquities into the British Museum (Jacobs, 2020).

Crown-to-Crown transfers. The British Museum could receive campaign material through transfers between arms of the same imperial state. Benin is the clearest case. The 1897 expedition was launched as a military operation under British authority, but its political context involved the Niger Coast Protectorate, the Foreign Office, and imperial commercial interests. Objects seized from Benin City entered official custody; a large block of plaques was held by the Foreign Office; and many were later transferred or donated to the British Museum. The Protectorate's commissioner shipped some 300 plaques to London through the Crown Agents for the Colonies, the Foreign Office lent them to the Museum in September 1897, and the Museum kept about 200 (Hicks, 2020; Lidchi, 2022). The immediate catalog source can therefore appear as a government department, even when the

underlying movement began with military conquest (Hicks, 2020).[91] This Crown-to-Crown logic also appears in other contexts, including objects presented by Queen Victoria, the Admiralty, the India Office, or other government bodies (Caygill and Cherry, 1997). On the commander's side, Benin paid no prize money, since the commanders divided the loot on the spot without prize agents, the officers keeping their trophies while the official share went to the Foreign Office and to sales credited to the Protectorate (Lidchi, 2022), and Rawson's rewards came through the career channel of Section 5.1.2: the KCB, the Channel Squadron, and the governorship of New South Wales.

Curators and military expeditions. The boundary between military action and curatorial collecting could be even thinner. At Magdala in 1868, Richard Rivington Holmes, one of the British Museum's staff, accompanied General Napier's expedition in an official capacity. He purchased objects at the auction of loot on behalf of the British Museum and also acquired objects during the campaign. The Museum's collecting interest was present during the expedition itself, rather than arriving passively long after the war (Patrizio Gunning and Challis, 2023).[92] Magdala therefore helps justify treating military and museum channels as connected institutions rather than separate worlds.[93]

Transfers and excavations in the Museum's own history. The Museum's institutional history records the same channels from the receiving end. The Rosetta Stone and the other antiquities ceded by the French under the Treaty of Alexandria became Crown property and were presented by George III (Caygill, 2002, p. 19). The Admiralty brought the Lycian marbles from Xanthus in 1842 and passed the Easter Island statue Hoa Hakananai'a to the Museum through Queen Victoria (Caygill, 2002, pp. 32, 40). Naval officers gave directly, as Admiral Bligh did in 1813 and Captain Parry in 1824 (Caygill, 2002, pp. 22–23). The Bassae marbles were "bought at auction for the nation for 60,000 Spanish dollars" in 1815, and Parliament paid £35,000 for the Elgin marbles in 1816 on a Select Committee's recommendation (Caygill, 2002, pp. 22–23). The antiquities of the East India Company, including the Amaravati sculptures, came from the India Museum in 1880 (Caygill, 2002, pp. 46, 76). The Trustees funded Layard's second Assyrian expedition of 1849–51, and Museum officers were sent to dig at Nineveh or lent to the Egypt Exploration Fund (Caygill, 2002, pp. 34, 50). The Oxus treasure, "carried off by bandits" after its discovery in 1877, was bought in the bazaars of Rawalpindi by General Sir Alexander Cunningham, sold to Franks, and

[91] British Museum, "Benin Bronzes," https://www.britishmuseum.org/about-us/british-museum-story/contested-objects-collection/benin-bronzes.

[92] British Museum, "Maqdala collection," https://www.britishmuseum.org/about-us/british-museum-story/contested-objects-collection/maqdala-collection.

[93] Victoria & Albert Museum, "Maqdala 1868," https://www.vam.ac.uk/blog/museum-life/maqdala-1868.

bequeathed to the Museum (Caygill, 2002, p. 46).

The late-century cases. The same channels appeared across the late-century cases that animate the restitution debate. The Burma Field Force deposed King Thibaw in 1885 and auctioned smaller movable items from the Mandalay palace on the spot; the Benin Punitive Expedition removed thousands of royal-court objects, now dispersed across more than 150 museums; and the 1904 Younghusband mission looted the Palkhor Chode monastery at Gyantse despite the Hague-era restrictions on the seizure of cultural property (Clarke, 2021; Hicks, 2020; Myatt, 2011, 2012). These episodes differed in legal form and timing, but each connected military access to the movement of valuable objects through official, market, or private channels.

How common looting and military sale were. William Fagg, a keeper at the Museum, later described such taking as "an unofficial loot which was still the custom of war in the 19th century" (Hicks, 2020, p. 142). At Seringapatam in 1799 the prize agents dispersed Tipu Sultan's treasury through a series of auctions held to raise the cash for prize payments (Jasanoff, 2005, p. 183). Material from foreign wars sits today in the national museums and in regimental museums across Britain (Lidchi and Allan, 2020, p. 1). The South Kensington Museum displayed King Theodore's regalia from Magdala and objects seized in the Asante campaign of 1873–74 as trophies. An essayist of 1868 called the case "spolia opima of our late enemy," and the museum's 1888 guide still recorded the vestments as "captured during the Abyssinian campaign under Lord Napier of Magdala" (Barringer, 1998, p. 21).

Legal heterogeneity, overlapping categories, and final-transaction labels. A central issue is legality. The paper does not assume that all acquisitions were illegal, nor that all British Museum artifacts from battle regions were stolen. Nineteenth-century acquisition channels were legally heterogeneous: objects reached the Museum through dealers' sales, private collectors' donations, government transfers, excavations, diplomatic pressure, and military spoil. The relevant historical claim is therefore that British imperial warfare often operated in a world where seizure could be morally condemned yet regularized administratively through prize, auction, government transfer, or private property, and not that all Museum acquisitions were illegal loot. The four categories overlap. A single campaign could combine official seizure, prize sale, private retention, and later donation, and the British Museum catalog records only the final transaction by which an object entered the collection. A label such as "purchase," "donation," or "bequest" therefore need not describe the original conditions of removal: an object taken under arms could first pass through a government department, an officer's collection, an auction house, or an heir before appearing in Bloomsbury (Stahn, 2023; Kopytoff, 1986). For the empirical analysis, the key distinction is

between ordinary collecting and battle-induced acquisition, not between objects that were "stolen" and objects that were "legal." A catalog entry recorded as a purchase, donation, government transfer, or bequest can still be downstream of a military event if the object first entered British hands through battle, occupation, prize procedure, military auction, or campaign-related sale.

A.3 Campaign Case Studies

This subsection presents eleven further campaigns, beyond the Benin City case featured in Section 4.1, whose accession profiles and officer-wealth records illustrate the paper's main extraction channels. Each case pairs documented historical evidence with the city-year artifact time series visible in the British Museum catalog. The cases span sub-Saharan Africa, North-East Africa, South Asia, East Asia, Central Asia, and Crimea, and range across the prize channels outlined in Section 2.2.

Four campaigns carry their own accession figure: Kerch 1855 (Panel A of Figure A.6), Magdala 1868 (Panel B of Figure A.6), Kumasi 1874 (Panel C of Figure A.6), and Gyantse 1904 (Panel D of Figure A.6). These are the cases that satisfy three conditions jointly: a documented seizure or prize-sale channel in the historical record, a near-zero pre-battle acquisition baseline, and an inflow concentrated in the battle year or the year after. Together with Benin they are the object-level counterpart of the estimated short-run response, and between them they instantiate each of the routes by which seized material reached Bloomsbury: officer donation at Kerch, an army prize auction held on the battlefield at Magdala, a London trade auction and a colonial state transfer at Kumasi, and individual trophy-taking at Gyantse. The cases that follow them illustrate the slower saleroom channel of Sections 4.5 and 4.6.3, Yuanmingyuan and Beijing, and the prize and career channels of Section 5, Bharatpur, the Mutiny, Banda and Kirwee, Mandalay, and Omdurman. Figure A.33 extends the Benin series to 2024. Nearly two-thirds of the Museum's Benin City holdings arrive after 1913, in a handful of dated transfers from other British collections, and the last Benin City acquisition dates to 1993.

Service branch and prize channel. The Royal Navy and the British Army operated under different incentive systems, and the resulting prize channels each produced distinctive artifact and probate signatures. *Navy* captures fell under the formal Admiralty Court, which adjudicated each prize, gazetted the distribution, and paid officers and crews from a standardized share table: the Admiralty-court channel. *Joint* expeditions involving Army and Navy units (e.g. Sevastopol/Kerch, Yuanmingyuan, Benin, Beijing 1900) typically followed the Admiralty's procedural template even when most of the spoils were inland. The *Army* alone had no equivalent statutory regime: prize on land was distributed only by ad hoc

Royal Warrant from the Crown, issued campaign by campaign: Bharatpur (1826), Ghuznee (1839), Hyderabad/Sindh (1843), Mooltan (1851), and the Mutiny-era funds gazetted between 1861 and 1867 among them. When no warrant was issued, army commanders relied on informal prize agents appointed in the field (Magdala, Kumasi), on regimental auctions of seized property (Mandalay, Omdurman), or on individual trophy-taking by named officers (Gyantse). The Banda/Kirwee 1858 case is unique: an army general, denied a Royal Warrant for the treasure his force had seized, sued through the Admiralty's prize court. Each case below is tagged with its dominant service branch and prize channel. The cases are grouped by channel: the four artifact-heavy cases first, then the two Beijing cases that show the slow-release channel, then the cases that illustrate the prize and career channels.

Sevastopol and Kerch, 1854–55. During the Crimean War, British and allied forces besieged Sevastopol and briefly occupied Kerch, a small port near the Bosporan antiquities zone in the eastern Crimea (a *Joint* Army–Navy expedition; Admiralty-court channel for Sevastopol naval prizes and prize-agents channel for the inland Kerch removal). The Kerch expedition of May 1855 resulted in the removal of antiquities from the Kerch museum and local tombs, supplementing the larger Crimean artifact flow recorded in McPherson (1857). Panel A of Figure A.6 plots the 647 Sevastopol and Kerch artifacts accessioned between 1750 and 1913; 433 of them, two-thirds of the total, arrive in 1856 alone, the year after the Kerch expedition, against a pre-war baseline of about six artifacts a year. That single year is dominated by two donors: Duncan McPherson, the army surgeon who authored the 1857 *Antiquities of Kertch*, with 225 artifacts, and Colonel Munro with 145. The Crimean case is the officer-donation route of Section 4.6.3 at its clearest: a spike at the military timing, carried by two named officers.

Magdala, 1868. The 1868 Magdala (Abyssinian) Expedition (an *Army* action; prize-agents channel) is the paper's clearest example of a pre-planned institutional extraction operation. The British government deployed a punitive expedition under General Robert Napier to rescue hostages held by Emperor Tewodros II; the operation included a £1,000 British Museum acquisition brief for Richard Holmes, one of its staff, to accompany the expedition and select objects (Patrizio Gunning and Challis, 2023). The fortress fell on 13 April 1868 and was destroyed on the 17th; an Army Prize Committee reassembled the plunder and auctioned it on the Delanta Plain on 20–21 April. Holmes entered Magdala with the assaulting force and, funded in advance, outbid most other buyers at the sale, carrying off some 350 manuscripts along with the crown of the Abun. The British Museum thus sent one of its staff to the battlefield to acquire the spoils of a campaign rather than merely receiving them afterward. Magdala itself is a remote mountain fortress absent from the

Natural Earth populated-places list, so the campaign geocodes to Dese, the nearest recorded place. Panel B of Figure A.6 plots that series, and its timing is the sharpest in the sample: 49 artifacts arrive in 1868 itself against a baseline of zero in every one of the preceding ten years, and the catalog states the channel in its own words, recording artifacts "purchased at the Army sale of loot from Maqdala on the Delanta Plain, 20–21 April 1868." Sir Stafford Northcote, then Secretary of State for India, is the largest named donor with 25 artifacts. Napier was ennobled as Baron Napier of Magdala.

Kumasi (Asante), 1874. The Third Anglo-Asante War of 1873–74, under General Sir Garnet Wolseley (an *Army* action; prize-agents channel), ended with the occupation and burning of Kumasi, the Asante capital in modern Ghana. Wolseley had prize agents elected in Kumasi to pick out the most valuable palace property for auction, and in early April 1874 Garrard's of London, the Crown Jewellers, bought the unsold prize and the Asante indemnity gold for £11,000 and showed them in the Haymarket before selling them at auction (Watt, 2023). Panel C of Figure A.6 plots the 498 Kumasi artifacts accessioned in 1750–1913 against a pre-campaign baseline of essentially zero. Two pulses stand out, each following an expedition: 37 artifacts in 1874 itself, of which 16 were bought directly from Garrard's and 13 donated by Augustus Wollaston Franks, and 234 in 1896, transferred almost entirely (222) by the Gold Coast Government after the deposition of Prempeh I. The 1874 pulse is the auction channel and the 1896 pulse the colonial state-transfer channel, the same route by which the Foreign Office sent the Benin material a year after 1897. Wolseley's expedition is also the operational template adopted by the "Wolseley ring" of officers (McNeill, Butler, Buller, Brackenbury, Colley, Evelyn Wood, Baker Russell, Carr Glyn, Maurice, McCalmont) in subsequent late-nineteenth-century imperial campaigns; the ring generated several peerages (Wolseley of Cairo 1882, Kitchener of Khartoum 1898) that connect directly to the paper's officer-career channel. The Kumasi case bridges the Benin (direct seizure plus auction) and Delhi (officer-career) mechanisms, and is the clearest example of the post-1870 template of imperial expropriation that reached its apogee at Benin in 1897.

Gyantse and Guru, 1904. Brigadier-General James Macdonald and Colonel Sir Francis Younghusband's mission to Tibet, fought at Guru on 31 March 1904 and Gyantse on 6–7 July 1904 (an *Army* action; individual-trophy channel), saw the Younghusband expedition's officers loot the Palkhor Chode monastery at Gyantse despite an explicit no-looting proclamation, and engage in battlefield body-stripping of Tibetan dead at Guru. Myatt (2011, 2012) document the sequence in detail: what began as the collection of battle trophies from the captured monastery-city became general looting of deserted monasteries and houses, and a steady stream of Tibetan objects reached Britain, some sold at Christie's. Panel D of Fig-

ure A.6 plots the Gyantse series, which compresses almost the city's entire recorded history into a single post-battle year: 34 of its 41 artifacts enter the British Museum in 1905, the year after the storming of Gyantse Dzong, against no recorded acquisition in any earlier year at all. Most of the 34 carry no recorded acquisition source, a pattern consistent with material that entered through personal collecting rather than an institutional consignment. The named minority, however, are all expedition personnel (Captain W. F. O'Connor, the correspondent Perceval Landon), and objects such as the skull cup inscribed "Palkhor Chode" by its collector, Major H. A. Iggulden, record the seizure on the object itself. Taking Gyantse and Lhasa together, the catalog holds 139 artifacts, of which 108 enter in 1904–1915, the principal donors being O'Connor (50) and Hugh E. Richardson (3), with smaller transfers from Brigadier-General Macdonald via Sir Augustus Wollaston Franks's network. The Tibet case post-dates the 1899 Hague Convention's first prohibitions on cultural-property seizure, which shows that the formal restriction did not close the individual-trophy route.

Yuanmingyuan / Baliqiao, 1860. The sacking of the Yuanmingyuan (Old Summer Palace) in October 1860, following the Anglo-French victory at Baliqiao and the occupation of Beijing (a *Joint* Army–Navy expedition; auction channel), was the largest single transfer of Chinese imperial art into European collections (Tythacott, 2018b). The expedition's plunder totaled an estimated £26,000 distributed by rank through a formal prize auction at Xihuang-si on 11 October 1860. Some 1,329 objects subsequently passed through twenty-two London auctions between 1861 and 1897, and they entered British collections over four decades. Only 13 Beijing artifacts enter the British Museum within four years of the sack. The bulk arrive from the 1880s onward, with notable late arrivals including the British Museum's Porcelain Pagoda tile (accessioned 1923) and the Percival David Collection transferred in 2009. Yuanmingyuan is therefore a case of the slow-release channel of Section 4.5 rather than of the short-run response, and it shows why the immediate post-battle window is a lower bound on total extraction. The named dealer-to-curator chain runs through John Coleman Isaac (Wardour Street) to Augustus Wollaston Franks (British Museum curator 1866–96); Franks is the largest BM donor of Chinese material in the late-Victorian accession data. Beijing was sacked a second time in 1900 during the Boxer Expedition, treated separately as the 1900 case below.

Beijing, 1900. The Eight-Nation Alliance occupation of Beijing in August 1900 (a *Joint* Army–Navy expedition under General Sir Alfred Gaselee for the British contingent; auction channel) followed the relief of the Legation Quarter and produced what an American journalist called "the biggest looting expedition since Pizarro." Gaselee organized an official prize auction at the British Legation that paralleled the 1860 Xihuang-si auction, with proceeds

distributed by rank. The British Museum catalog records 593 Beijing- and Tianjin-tagged artifacts in 1750–2024, with only a small immediate-window pulse comparable to the 1860 Yuanmingyuan profile and again consistent with a long-tail dispersal through the London art market and private bequests over the subsequent century. The case is the second of the two Beijing pulses (cf. the 1860 Yuanmingyuan case above) and demonstrates the persistence of the joint-expedition auction channel into the very last years of the Qing dynasty.

Bharatpur, 1826. Lord Combermere's storming of Bharatpur on 18 January 1826 (an *Indian Contingent* action; prize-agents channel under a campaign Royal Warrant) yielded an estimated £480,000 in prize money distributed by rank, with one-eighth (about £60,000, equivalent to roughly £8 million in 2025 prices) reserved for the commander (Biddulph, 1933; Finn, 2021). The 17.75-ton "Bhurtpore Gun," the largest single trophy of the campaign, was carried back to the Woolwich Royal Artillery Museum, and the campaign's material went to regimental and ordnance institutions in the same way. Combermere was ennobled as 1st Viscount Combermere with the Garter and the Bath. The case illustrates the prize channel of Section 5.1.2 and is an early example of the army-prize-agent channel that subsequent Royal Warrants (Hyderabad 1843, Delhi 1857) institutionalized.

Delhi 1857 and Lucknow 1858. The 1857–58 Indian Mutiny centered on the sieges of Delhi (May–September 1857) and Lucknow (June 1857 – March 1858); both were *Indian Contingent* actions, their prize collected by agents in the field and distributed under Royal Warrants gazetted in 1861. Both cities saw prolonged sackings after British recapture. The campaign is the paper's officer-career case, and its evidence is the Gazette record. The Mutiny is the campaign behind the paper's rank-purchase evidence in Section 5.2. Purchases in the regiments that fought it rose by 45 percent of their pre-campaign rate after 1859 relative to regiments that saw no combat, consistent with prize pots of £346,000 at Delhi and £148,000 at Lucknow (Section 2.2). Engels's 26 June 1858 article in the *New-York Daily Tribune* captures the incentive logic. Engels quotes William Howard Russell of *The Times*, who wrote that "some of these officers have made, literally, their fortunes", and adds that "above 150 officers have sent in their resignations to Sir Colin Campbell — a very singular proceeding indeed in an army before the enemy" (Engels, 1858).

Banda and Kirwee, 1858. Major-General George Cornish Whitlock's Saugor Field Force seized treasure at Banda and Kirwee in Bundelkhand in March–June 1858 (an *Indian Contingent* action; uniquely the Admiralty-court channel for a land force). The Crown declined to issue a Royal Warrant; Whitlock therefore litigated through the Admiralty Prize Court for eight years, and the warrant that finally granted the fund (signed at Windsor on 22 November 1866 and gazetted on 5 February 1867; *London Gazette*, issue 23216) put the

pot at 55 lacs 50,000 rupees, about £555,000 with interest and after costs. The warrant reserved a twentieth for Lord Clyde and the officer commanding and divided the remainder into shares of one for each shilling of daily pay: twelve shares to a captain, seven and a half to a first-class lieutenant, two to a sergeant, and one to a private. The case illustrates the prize channel of Section 5.1.2: the fund is the largest of the Mutiny warrants, and its shares are the ones Section 5.2 describes officers watching while the purchase market was open.

Mandalay and Bhamo, 1885. Major-General Sir Harry North Dalrymple Prendergast's Burma Field Force occupied Mandalay on 28 November 1885 (an *Army* action; auction channel), captured 1,861 royal guns, deposed King Thibaw, and auctioned much of the contents of the Mandalay Palace on the spot for an estimated 9 lakhs of rupees (about £60,000) (Clarke, 2021).[94] The British Museum catalog records 38 Mandalay- and 3 Bhamo-tagged artifacts in 1750–2024, with the principal donor channels being Lieutenant-Colonel Sir Richard Carnac Temple (5 votive plaques and ritual objects), Colonel Sir Edward Bosc Sladen (6 Burmese palace items), and Colonel I. C. Byrne (5), regimental and political-service officers operating through the Indian Civil Service and Burma Commission. Prendergast, who had won the Victoria Cross in the Indian Mutiny, was created KCB for the campaign. The case illustrates the on-the-spot auction channel of Section 4.6.3, with the proceeds distributed across the Burma Field Force.

Omdurman, 1898. Major-General Sir Herbert Kitchener's victory at Omdurman on 2 September 1898 (an *Army* action; auction channel) reconquered the Sudan, was followed by the deliberate desecration of the Mahdi's tomb (the body disinterred and beheaded, the head reportedly considered for shipment as a drinking-cup before Queen Victoria's formal protest), and brought Kitchener the barony of Khartoum. The British Museum catalog records 161 Omdurman- and Khartoum-tagged artifacts in 1750–2024, of which 12 enter in 1898–1910 via the Government of Sudan and several private donors (Mrs Altemont-Smythe, C. Kersey, and others).

A.4 Officers, Regiments, and Incentives

Why officers matter. The military channel matters because wartime artifact flows could affect soldiers and officers personally. British officers operated in a system in which rank, wealth, and status were closely connected. Before the abolition of purchase in 1871, many commissions and promotions could be bought. Pay was often low relative to the costs of maintaining officer status, and liquidity could matter for promotion, retirement, exchange,

[94]The sale figure and the ordnance count follow "Burmese Wars," *Encyclopædia Britannica*, 11th ed. (1911), vol. 4, which reports that the Mandalay loot "when sold, realized about 9 lakhs of rupees (£60,000)," and that the British took "all the king's ordnance (1861 pieces), and thousands of rifles, muskets and arms."

reputation, and social standing. Prize money, saleable objects, valuable trophies, and campaign reputation could therefore generate meaningful private gains.

Assignment and exposure. This incentive channel does not require officers to choose wars in order to loot. Officers and regiments were deployed through military command, imperial strategy, logistics, garrison rotations, and the availability of troops. Individual officers generally could not freely select the campaign that promised the greatest private return. The relevant empirical variation is exposure: some officers and regiments were assigned to campaigns that generated more prize money, more saleable objects, or greater reputational returns than others. This is why the background must discuss assignment, but without claiming that battles or deployments were fully random.

Why assignment does not need to be fully random. The empirical design does not require the strong assumption that wars were randomly located across the globe. British forces fought for strategic, commercial, diplomatic, and imperial reasons. The design instead compares acquisition flows before and after British-involved battles within places, absorbs common year shocks and persistent place characteristics, and uses placebo comparisons with non-British battles. For the officer analysis, the key concern is whether officers selected into artifact-rich campaigns because they anticipated future museum acquisitions. That is much less plausible than the broader fact that imperial strategy determined where British forces fought. Military assignment, rotation, and command decisions therefore create exposure to variation in prize and artifact opportunities.

The level of officers' pay. The army's pay scale was set on 25 June 1806, when a captain's rate rose from 9s 5d to 10s 6d a day (Wood, 2011, p. 233), and it was not altered again, apart from marginal adjustments, until 1 January 1914 (Spiers, 1980, p. 14). Rates ran from £95 16s 3d a year for an ensign to £365 for a lieutenant-colonel, less than half the remuneration paid to clerks of equivalent grade in the War Office (Spiers, 1980, p. 14). In January 1870 pay ran from £118 12s 6d for a lieutenant of the line infantry to £522 for a lieutenant-colonel of the Household Cavalry (Beckett, 2018, pp. 19–20). Mess and band subscriptions, uniform, and equipment came out of pay, and by the late 1860s a cavalry subaltern needed a private income of at least £400 a year (Bruce, 1980, p. 73). The authorities never treated pay as full remuneration. It had originated as a supplement to the profits an officer expected to make in wartime, and William Windham, Secretary of State for War, told the Commons in 1806 that "none could enter the army as officers, who had not something else besides their pay" (Bruce, 1980, pp. 87–88). The law and the other professions made the same assumption (Beckett, 2018, p. 20). Fortescue described officers' pay as a retaining fee against the day of prize money, "less a wage for service done than a fund to enable the service to be performed;

rather the tools of a trade than the profits of a trade" (quoted in Harries-Jenkins, 1977, p. 85). In 1868 Henry Brackenbury complained that officers' pay had remained effectively the same since 1806 while their living costs had risen by half (Beckett, 2018, p. 20). The low rate was a frequent source of complaint but never a major political issue (Harries-Jenkins, 1977, p. 85). Parliament declined to raise it while candidates for commissions remained plentiful (Bruce, 1980, pp. 88, 161), and the Stanley Committee of 1902, appointed to make commissions affordable to officers of moderate means, left the 1806 rates untouched (Beckett, 2018, p. 23).

Benchmarks and present-day values. Williamson's series of nominal annual earnings by occupation puts a commercial clerk at £201 in 1815 and £236 in 1851, a skilled building tradesman at £66 and an agricultural laborer at £29 in 1851, and a clergyman at £267 (Williamson, 1982). In the 1890s, £300 a year was the average income of the salaried middle class, £25 a reasonable income for an agricultural laborer, and £90 to £120 a curate's stipend (Beckett, 2018, pp. 22–23). Converted with the long-run Retail Prices Index of the Office for National Statistics, the deflator applied to probate values in Appendix B.6, a captain's £190 corresponds to about £24,000 at 2025 prices at the price level of 1806 and to about £37,000 at the level of 1851, after the postwar fall in prices. A naval lieutenant's £110 was about half a commercial clerk's earnings in 1815 and corresponds to about £14,000 at 2025 prices.

Naval pay, half-pay, and prize. The Admiralty's peacetime scale of 1 July 1814 replaced the wartime rates of 1806 (Lewis, 1960, p. 313). A lieutenant on full pay drew 6s a day, about £110 a year, and an admiral commanding in chief £1,820, roughly 150 times the basic pay of an ordinary seaman (Lewis, 1960, pp. 298, 314). At the peace the list held about 4,000 lieutenants, of whom some 300 drew the maximum half-pay of 7s a day, 700 an intermediate rate, and about 3,000 the minimum of 5s (Lewis, 1960, p. 313). Naval commissions could not be purchased, and an officer without a command earned no prize (Aldous, 2020, p. 187). Nelson, himself on half-pay before 1793, opposed sending his stepson to sea on the grounds that the service paid only in wartime and that a youth with only his pay could not live on it (Lewis, 1960, pp. 312–313). Prize money was the most important material inducement to a naval career, though largely a wartime phenomenon and almost negligible in peacetime (Lewis, 1960, pp. 315–316). After 1815 captures of smugglers, pirates, and slave ships continued to yield prize to officers in command, and in November 1816 the Admiralty restored, for anti-smuggling captures, the three-eighths share of captains and flag officers that had been cut in 1808 (Aldous, 2020, p. 193).

Officer pay and rank purchase. Commission purchase made officer rank a capital asset. Allen (1998, 2002) interpret the British Army and Royal Navy as different solutions to incentive problems under different observability conditions. At sea, naval targets moved and prize incentives could distort effort; the Admiralty therefore combined prize money with monitoring, logs, court procedures, and tactical rules. On land, targets were fixed and outcomes more observable; the army relied heavily on commission purchase. Officers paid for commissions and promotions, and the price gave them a transferable stake in continued service. A promotion chain compensated the officer whose retirement created a vacancy. In Bruce (1980)'s example, a captaincy priced at £1,800 required the incoming lieutenant and ensign to contribute substantial sums to move up the hierarchy. The regulation tariff of 1854 ran, in the infantry, from £450 for an ensign through £700 for a lieutenant, £1,800 for a captain, and £3,200 for a major to £4,500 for a lieutenant-colonel. A lieutenant-colonelcy cost £6,175 in the dragoons, £7,250 in the Life Guards, and £9,000 in the Foot Guards (Bruce, 1980, pp. 177–178). Over-regulation premiums came on top. In the 1860s the step to lieutenant-colonel cost about £4,570 above regulation in the Household Cavalry and £2,500 in the infantry, and a Foot Guards captaincy carried a premium of £3,700 (Bruce, 1980, p. 51).

Ranks as capital assets. By the mid-nineteenth century, large amounts of officer capital were tied up in commissions. Official prices understated the true cost because over-regulation payments, side payments, army-agent credit, and social expenses also mattered (Bruce, 1980). Ordinary pay was often too low to amortize these sums. This structure meant that campaign gains could affect careers through several margins: they could provide liquid wealth, finance promotion, create vacancies, increase retirement demand, or raise the value of service in particular theaters. The mechanism is therefore broader than prize money alone. A campaign could create cash, objects, reputation, vacancies, and exchange opportunities within a hierarchy whose ranks were themselves financial assets.

Prize money as a wealth shock. Prize money could be large relative to ordinary pay. The Indian Mutiny is the clearest example: the eleven funds granted by its Royal Warrants sum to about £1.2 million, and the 1867 Banda and Kirwee warrant set a captain's share at twelve times a private's (Section 2.2). Even if only some campaigns generated such large payments, the existence of this channel explains why soldiers and officers had an economic interest in capture, auction, and distribution. It also explains why artifact-rich campaigns could affect officer wealth even when officers did not personally retain the most valuable objects.

A contemporary account. Engels (1858)'s June 1858 dispatch on the British recapture of Lucknow describes the purchase market responding to such a windfall in real time: officers and soldiers "went into the town poor and debt-ridden, and came out suddenly enriched," followed by a wave of officer resignations. Under the purchase system, retirement was the moment at which an officer sold his commissions and took his money out, and so many officers applied to leave during the Mutiny that the Duke of Cambridge withheld his approval (Bruce, 1980). Section 5.2 tests whether this response is visible at scale in the purchase record.

Reputation and careers. Campaigns could also matter through reputation. A victory associated with spectacular spoils, public exhibitions, parliamentary debates, newspaper coverage, or museum display could improve an officer's standing. Officers who participated in famous campaigns could gain social access, promotion prospects, honors, or later appointments. This reputation mechanism is distinct from direct wealth transfer. It implies that artifact-rich campaigns could affect careers even if the value of objects personally retained by an officer was small.

Regiments and collective gains. Regiments could also benefit collectively. Campaign objects might enter mess collections, regimental museums, or officers' private collections. Prize money could be distributed among officers and rank-and-file according to rank. Regimental participation in high-profile campaigns could generate honor, vacancies, or promotion opportunities. This is why the empirical analysis examines not only commanders' probate wealth but also regiment-level promotion by purchase in the *London Gazette*. If campaign gains relaxed liquidity constraints, regiments exposed to artifact-heavy battles should show increased by-purchase promotion activity.

Connecting artifacts to officer outcomes. The paper defines artifact-heavy battles using post-battle British Museum artifact inflows because those inflows proxy for the broader object and prize environment surrounding a campaign, not because the Museum itself paid officers in most cases. A campaign that generated many objects for the British Museum likely also generated objects for officers, auctions, private collectors, government offices, and dealers. Artifact inflows therefore serve as a measurable trace of the spoils a campaign generated. The officer-level analysis then tests whether commanders associated with such campaigns had higher wealth at death, and whether regiments associated with such campaigns displayed more by-purchase promotions.

Summary of empirical implications. The historical background yields four empirical implications. First, British-involved battles should increase artifact acquisitions from nearby places, especially after victories or episodes followed by occupation and control. Second, ac-

quisition effects may persist because objects moved through auctions, dealers, officers, heirs, and bequests before entering the British Museum. Third, acquisition-source records should reveal the channels described above: government offices, military sellers, auction houses, dealers, curators, diplomats, colonial officials, and private collectors. Fourth, campaigns that generated larger artifact flows may also have affected officers and regiments through prize money, saleable objects, rank purchase, reputation, and promotion opportunities. The empirical sections test these implications by linking geocoded British Museum records to British-involved battles, estimating short-run and long-run acquisition responses, comparing British battles with placebo conflicts, examining acquisition-source channels, and connecting artifact-rich campaigns to officer wealth and regiment-level promotion outcomes.

Appendix B Additional Information on Data Construction

B.1 British Museum: Scraping and Processing

Source and coverage. The British Museum makes collection metadata publicly available at https://www.britishmuseum.org/collection. In 2024, I collected the records returned by every geographic place term in the British Museum's vocabulary. Objects with no geographic information are therefore outside the scrape and could not enter the spatial analysis. The resulting data contain 1,532,147 unique artifacts, identified by Museum number, with fields for object type, title, dates, places, acquisition source, description, materials, culture, style, and exhibition history. The scrape is a snapshot of a catalog that the Museum continues to extend; later additions would add artifacts but would not alter the acquisition years or find spots of the artifacts already recorded. Figure A.1 shows a representative entry.

Scraping procedure. The scraping ran in two rounds, both organized around the British Museum's geographical vocabulary. In the first round I looped over every place term appearing in the collection interface, queried each term in the collection search, and parsed the paginated object lists the query returns, page by page. In the second round I re-queried each place term in combination with the search's production-date filter, splitting the results by date period; the split breaks the interface's caps on large result sets and recovers artifacts the first pass missed. I then deduplicate the raw rows into 1,532,147 unique artifacts keyed on the British Museum number, keeping the most complete record among duplicates.

Date extraction. Two date fields are central to the analysis: the acquisition year and the production year. Acquisition dates in the raw records take heterogeneous forms (e.g.,

"1897", "August 1897", "19th century", "donated in the 1890s"). I extract a numeric acquisition year from each record using regular-expression parsing that identifies four-digit years, century references, and decade references. Production dates are similarly heterogeneous and may indicate ranges (e.g., "1500–1600") or eras (e.g., "3rd century BC"). I extract the earliest plausible production year from each record using a dedicated parser that handles BC/AD notation, century qualifiers (early, mid, late), decade references, and year ranges. The production year enters the analysis only as a screen: artifacts whose earliest plausible production year falls after 1913 are dropped, artifacts without a parseable production date are retained, and dating each artifact at the midpoint or the end of its range would only remove further artifacts whose ranges span 1913 without changing any acquisition year.

Acquisition-source parsing. The acquisition-source field records how the British Museum received an artifact and names donors, sellers, or intermediaries when known, for example "Donated by Sir Augustus Wollaston Franks; Purchased from Christie's." I extract the method, the named parties, and whether a party carries a British military rank. I detect ranks with a regular-expression pass over British Army, Royal Navy, Royal Marines, and Royal Air Force rank abbreviations and variants (Field Marshal, General, Lieutenant-General, Major-General, Brigadier, Colonel, Lieutenant-Colonel, Major, Captain, Lieutenant, Ensign, Cornet, Subaltern, etc., plus common abbreviations Gen/Genl/Col/Lt-Col/Maj/Capt), and I flag an artifact if any named person in its acquisition chain holds a military rank. The artifact-level indicator is `source_military`; aggregating it by place and year produces the `count_artifacts_mil_source` outcome used in the mechanism table. This outcome therefore counts artifacts whose acquisition source names a military person; it is distinct from the narrower war-related and explicit-loot sets built from the catalog notes. A Magdala record illustrates the latter: its note states that the object was "purchased at the Army sale of loot from Maqdala on the Delanta Plain, 20–21 April 1868," which the parser records as an army-sale and explicit-loot reference.

Place-hierarchy parsing. The British Museum links each place to broader locations: Gyantse Monastery, for example, links to Gyantse city, then Gyantse County, Tibet, and Asia. I collect these links for 47,796 terms and use the full path to distinguish place names without country qualifiers. Thus "Punjab (India)" selects the Indian path among several places named Punjab, while an uncertainty marker such as "Taxila (?)" remains recorded as uncertain. The qualifier fixes which country's path a record takes, not where inside that country an object was found. Partition split Punjab, and the British Museum's vocabulary lists the pieces separately: "Punjab (India)" and "Punjab (Pakistan)" resolve at region precision near Amritsar and Lahore respectively, while the unqualified "Punjab (historic)" resolves

at multi-country precision. Records of that breadth are the imprecise class I bound with the precise-only, grid, and proportional-distribution designs. I apply the same procedure to find spots and production places before geocoding them in Appendix B.2.

Available variables. Table A.32 groups the 77 artifact-level columns by their role in the analysis. The empirical analysis uses the identifiers, dates, places, acquisition source, provenance notes, descriptive categories, and exhibition history; object-specific fields remain available but do not enter the baseline regressions.

Catalog completeness. I compare the scraped online collection against the British Museum's own internal MI+ registration counts published by MacDonald (2023), decade by decade over the 1760s–1910s: the scraped catalog covers a stable fraction of the internal count and tracks its decade-to-decade movements closely (correlation $\rho = 0.90$). What matters for the identification is the timing of coverage rather than its level: proportional under-coverage attenuates nothing in a within-unit design, whereas selectively timed digitization would; the close co-movement rules the latter out.

Entry-channel classifier. I classify how each artifact reached the Museum, combining the recorded acquisition method with the name of the counterparty into seven channels: government transfer, military gift or bequest, military sale, dealer or auction purchase, private purchase, private gift or bequest, and no counterparty recorded. The classifier reads the raw acquisition-name string together with the source-person and source-organization fields and applies rules in priority order. A government body in the string, among them the Foreign, India, War, and Colonial Offices, the Admiralty, the Crown Agents, the colonial governments, and the India Museum, assigns the artifact to government transfer whatever the method, so a purchase from the Treasury under the treasure-trove machinery counts as the state route, with the method kept in a detail field. A military source, meaning a military rank in the string or an organization flagged as military, assigns the artifact to military donation when the method is a gift, bequest, in memoriam gift, or the Museum's bare "From:" form, and to military sale when the method is a purchase. A purchase whose string names a trade firm, from a curated list of dealers and auction houses or generic firm markers such as "Messrs" and "& Co," is a dealer or auction purchase, whether the firm sold or acted as agent. Learned societies, excavation funds, museums, universities, churches, and missions form a separate institutional channel. Remaining purchases from named persons are private purchases, remaining gifts, bequests, transfers, and exchanges from named persons are private donations or bequests, and artifacts with no acquisition name are unrecorded. Two limits follow. Individual dealers outside the curated list stay in the private-purchase channel, so the dealer share is a lower bound. And the military channels key on a rank in the string, so

a military donor recorded without one, such as Dr Duncan MacPherson at Kerch, falls into the private-donation channel. Of the 495,716 artifacts the Museum acquired between 1816 and 1913, 3 percent came by government transfer, 1 percent as gifts from military sources, 1 percent by sale from military sources, 16 percent from dealers or at auction, and 63 percent from private persons by purchase, gift, or bequest.

B.2 Geocoding Methodology

Approach. Each artifact records a find spot, a production place, or both. Precision runs from a single building, such as the Yuanmingyuan palace complex, to an entry that names only a region of a country; two-thirds of located artifacts resolve to a specific city or village (Section 3.1). Find spots range from precise sites, such as "Summer Palace (Beijing)," to broad regions, such as "India (historic—pre-1947) (North-west)." Standard geocoders often mis-handle historical names and qualified descriptions such as Oudh, Gold Coast, and Punjab (India). I therefore geocode the British Museum's hierarchy-expanded place descriptions with a large-language-model pipeline. Repeated descriptions share one result, reducing 1,532,147 artifact records to 53,176 unique place entries.

Canonical geocode. The baseline uses the first find-spot entry that the British Museum does not mark as uncertain. I label every assignment as city-or-village, region, country, or multi-country precision. The robustness section then (i) restricts the outcome to city-or-village assignments, (ii) uses production place when the find spot is unavailable, (iii) uses production place alone, (iv) estimates the grid design, and (v) distributes broad records across plausible places in proportion to precise records.

Validation. I draw 100 artifacts at random from the analysis sample, compare each assigned coordinate with the catalog description and independent geographic references, and record the distance between them. The mean error is 5.5 km and the median 1.0 km: 96 assignments fall within 20 km, two between 20 and 50 km, one between 50 and 100 km, and one is misplaced by 206 km. In a second audit I check every recurring place description attached to more than ten artifacts, 8,698 descriptions covering about 88 percent of artifact–place links, and correct the errors I find. The greater-than-ten threshold concentrates this exhaustive review on repeated assignments while the random audit covers rarer terms.

LLM pipeline. The input is the British Museum's hierarchy-expanded place description together with a few object descriptions for context. The model identifies the modern country, region, nearest named place, coordinates, and precision category; it may consult external geographic references when a historical name or coordinate is disputed.[95] I then check

[95]The implementation uses OpenAI's `gpt-5.4-mini` at medium reasoning effort with structured output.

whether the coordinates fall inside the returned country or region and manually review flagged cases. Broad regions create a specific risk: representing Punjab by Lahore, for example, could place an imprecisely located artifact near a battle city. The precise-only, grid, and proportional-distribution estimates above are designed to test that failure mode rather than assume the representative city is exact.

Alternative geocoding sources. The baseline restricts the artifact-location signal to the LLM-resolved find-spot field, dropping artifacts for which the catalog records only a production place. An alternative geocoding rule speaks to whether this restriction drives the headline: the union of find-spot and production-place locations, falling back to the production-place geocode when no find-spot geocode is available. Table A.5 reports the static one-year coefficients under this rule. The post-battle rise remains positive and significant. Some compression is expected: production-place locations frequently identify where an object was *made*, often centuries before the engagement (the Benin bronzes were cast in the Oba's court workshops over four centuries; the Koh-i-Noor was mined in southern India centuries before Lahore 1849), so attaching production-place artifacts to the battle ledger introduces measurement error in the unit dimension. Find-spot is therefore the right geocoding rule for the question this paper asks, and the magnitude of the post-battle spike under the find-spot rule does not come from the geocoding choice.

B.3 Battle Data

Source material. Jaques (2007) is a three-volume encyclopedia containing 8,401 entries on battles and sieges throughout recorded history. Each entry consists of a narrative paragraph, typically 50–200 words, structured as: *Battle Name*, then *Year*, then *War/Campaign*, followed by a description of the engagement that names the belligerents, leaders, location, troop strengths, casualties, and outcome. I use *belligerent* to mean a state or organized armed body that the narrative identifies as taking part in the fighting.

Entry extraction. In a first pass I parse the plain-text export into 8,401 structured battle entries, retaining the verbatim narrative alongside the structured fields and decomposing the entry header into name, year(s), and war fields, with BC/AD notation mapped onto a uniform start-year/end-year schema. I then restrict the entries to the analysis window 1816–1913 (inclusive), the period from the close of the Napoleonic Wars to the eve of the First World War, yielding the 2,118-entry working file.

Structured extraction. For each narrative, the model records:

- *Identifiers*: battle name, year of battle, war or campaign.

- *Location*: historical place of battle, modern city/town, modern province/state, modern country, theater (land, sea, multi-domain).
- *Belligerents*: participants list, attackers and defenders with their leaders.
- *British involvement*: whether British forces participated, British force name(s), whether Britain was the attacker, the outcome for Britain (win, loss, draw).
- *Military details*: troop strengths and casualties for each side, stated reason for the engagement.
- *Geolocation*: inferred coordinates (latitude, longitude), ISO country code, and administrative unit names with accuracy classification (village, city or town, state, or country).

The model can consult external references, but I instruct it to do so primarily when a leader's spelling, rank, or battlefield coordinate is disputed. The dictionary narrative remains the source for the battle record, and every British battle is checked manually.[96] Figure A.3 reproduces the source narrative for the 1897 Benin expedition.

Compilation and checking. I match the extracted fields back to the 2,118 original narratives so every row remains traceable to its source. I check all 474 British battles field by field and use the manually verified value whenever it differs from the automated extraction. For the 1,644 non-British battles used in the placebos, I compare disagreements with the original narrative and geographic references and audit 100 battles at random. Across 500 judgments of year, British involvement, leader, outcome, and place, 98.8 percent are correct, with no error changing British classification. For coordinates, 98 of 99 conclusive cases fall within 50 km of the battlefield. The remaining Yangzi Pass error is also present in HCED: both automated files copied the same wrong coordinate, and checking the underlying geographic source revealed it.

Errors in the source. The hand-check also reveals errors in Jaques (2007) itself, which the corrected file overrides with the verified value and a source. The recurring types are misstated ranks (officers credited with ranks above those they held at the engagement, such as a colonel recorded as a general or Commander Nowell Salmon recorded as a captain); misidentified or garbled names (Sir Richard Church; John rather than Claude Douglas; Baker Russell reversed to "Russell Baker"); factual slips (one entry calls its commander an army lieutenant although the man never served in the army; another has Britain joining a

[96] The implementation uses OpenAI's Responses API with `gpt-5.4-mini`, medium reasoning effort, and structured output.

naval engagement in which no British ship can be documented); and geographic confusions (La Guaira, on Venezuela's Caribbean coast, described as on the "Pacific coast"). For each override I record the corrected value and the verifying source: the *Oxford Dictionary of National Biography*, the Gazette itself, or contemporary newspapers.

Identifying British battles. The British classification of each battle is the central treatment indicator in this paper. No published source codes British participation at the battle level, so the rule below is my own; the nearest coding, the participant strings of Miller and Bakar (2023), is looser, and the comparison paragraphs at the end of this appendix document every disagreement. "British" means of Great Britain and Ireland throughout. I code a battle as *British* if and only if a Crown force or an explicitly Crown-backed force took part in the engagement as a combatant, under British or His or Her Majesty's Government (HMG)-commissioned command and in service of the strategic interests of HMG. For instance:

- regular British Army and Royal Navy units;
- the East India Company through its 1858 dissolution and the Indian Army thereafter, both instruments of British rule in India;
- chartered companies acting as imperial instruments: the British South Africa Company's Matabele War battles of 1893 qualify because the 1889 royal charter made the Company a Crown instrument of southern-African conquest;
- HMG-authorized volunteer corps: the British Auxiliary Legion in Spain qualifies because it was raised by a Royal Warrant suspending the Foreign Enlistment Act, with HMG paying its officers, while the Spanish Liberal army it fought beside generates no British battles;
- HMG-seconded officers commanding host-nation forces: the fortress of Kars appears in the dictionary in 1828, 1855, and 1877, but only the 1855 siege is British, because Colonel Williams commanded the Ottoman garrison as HMG's officially seconded Commissioner, whereas in the two Russo-Turkish wars the same fortress was held under purely Ottoman command;
- Crown-backed colonial corps, such as the Cape Colonial Forces, the New Zealand Armed Constabulary, the West African Frontier Force, and Canadian militia deployed alongside British regulars.

The rule excludes two main classes:

- British officers privately employed by foreign governments without British authorization: Thomas Cochrane's Greek command had no HMG warrant;
- commercial or merchant-vessel incidents in which the Royal Navy was a passive observer, such as the Virginius Incident of 1873, a Spanish seizure of a gun-running steamer in which no British force fought, or in which British forces were present but did not fight, such as the neutral British warships at the Bombardment of Valparaíso.

The rule turns on the state because the treatment has to capture engagements of the British state: those are the engagements that could set the Crown's spoils machinery in motion, through prize courts, official dispatches, and honors, and they are the engagements the officer-incentive results of Section 5 interpret. A Briton fighting as the private employee of a foreign government fought outside that machinery, so his battles are not British treatments even where his motives, the prospect of pay from soldiering included, were identical.

Civil-war classification. The civil-war placebo of Section 4.4.3 requires a battle-level coding of internal conflicts. A battle is classified as a civil-war engagement if both belligerents are domestic parties of the same polity and no foreign power or foreign-led force took part in the fighting. An LLM pass over the dictionary entry read and classified each of the 2,118 in-window narratives against this definition, recording the two belligerents, whether any foreign force was present, a confidence grade, and a one-line justification. Of these, 642 battles qualify, 597 of them at high confidence. Foreign-assisted internal conflicts are excluded. Taiping engagements fought alongside the British-led Ever Victorious Army, for example, count as foreign-assisted rather than civil war. British battles never qualify by construction.

Incident-triggered expeditions. The timing split of Section 4.4.2 requires a battle-level coding of what set each expedition in motion. A British battle is flagged as *incident-triggered* if the expedition it belongs to was set off by a discrete, datable anti-British act that preceded any British decision to fight: an envoy, trader, or missionary killed, a Residency massacred, a treaty repudiated, or British shipping seized. The official dispatches and the metropolitan press called such an incident an "outrage," a term I avoid in the text because it records Britain's own casus belli category rather than an assessment of the act, and the classification of small wars taught in the late-Victorian army made campaigns fought "to wipe out an insult, or avenge a wrong" one of its three standing types (Callwell, 1906). The point of the flag is that the other side, not Britain, determined when the fighting began, so the timing of the engagement is less likely to be chosen to coincide with the British Museum's collecting opportunities. Operationally, the coder applied the following rule:

> *Flag the battle as outrage-triggered when the expedition it belongs to was set off by a discrete, datable anti-British act that preceded any British decision to fight: an envoy, trader, or missionary killed; a Residency or an expedition party massacred; a treaty repudiated; British shipping or British subjects seized. Record the trigger category, a one-line description of the triggering event, a confidence grade, and the narrative evidence supporting the classification.*

An LLM pass over the dictionary narrative classified each of the 474 in-window British battles against this rule. The rule sits inside a fuller category set that also codes suppress-rebellion, frontier-war, rival-European, planned-annexation, trade-enforcement, and exploration-or-survey engagements, so a battle carries the flag only when the narrative supports the outrage category against those alternatives. I then checked every flagged battle against the historical record, and that check is what removed the 1839 Aden expedition from the flag, for the reason given below. In all, 34 battles qualify (7.2 percent), 21 of them at high confidence, spanning 1816–1903. These 34 fall into two groups. Thirty are reprisals for a specific injury to Britain, such as the Ethiopian emperor Theodore's imprisonment of British envoys before Magdala or the Sikh invasion of British Punjab before Baddowal and Aliwal. The other four are enforcement actions after attacks on British trade and shipping: Chuanbi (1839), the two Second Opium War battles that followed the seizure of the *Arrow*'s crew, and Shimonoseki (1864). Appendix B.17 lists the campaigns and their triggering events, with the battles that fall under each.

This coding supports a robustness split and not an instrumental-variables design. An incident can affect acquisitions through public attention as well as through the battle it occasions, and some expeditions were in preparation before the incident that occasioned them: Hicks (2020) dates the planning of the Benin expedition some four and a half years in advance (see also Coombes, 1994), and the 1839 Aden expedition was nominally a reprisal for the plunder of a wrecked British ship but in practice the seizure of a long-sought coaling station (Gavin, 1975), so I exclude it from the flag. Pre-planning of this kind is a lesser threat to the baseline design than to a prospective instrument. The city fixed effects absorb the fact that Britain selected its targets, including for what they promised to yield, and an expedition timed toward a place whose acquisitions were already rising would appear as a pre-battle trend, which the event studies of Section 4.2 do not show. What the split can show is that the effect among battles whose timing was externally forced is similarly strong, if not stronger, which is the claim made in Section 4.4.2.

Year assignment. For battles spanning multiple years (e.g., prolonged sieges) I record both a start year and an end year. I produce three year-assignment variants for robustness:

(i) a start-year assignment, (ii) an end-year assignment, and (iii) a random assignment of each battle to its start or end year with equal probability (seed = 24). Of the 474 British battles, 460 fall within a single calendar year and the remaining 14 span exactly two, so the midpoint coincides with the start year throughout. The baseline specification and the panel treatment indicators use the start-year assignment, because the fighting, and with it the taking, begins in the start year.

Comparison with HCED. The natural published comparator is Miller and Bakar (2023)'s Historical Conflict Event Dataset (HCED), which is itself built from Jaques' dictionary (each HCED row carries a Jaques page reference), so the comparison is one of two independent structured extractions of the same source rather than of two independent battle censuses; a normalized crosswalk maps 8,376 of the 8,401 entries to a unique HCED row. Over 1816–1913 a normalized name-and-year crosswalk matches 2,036 of HCED's 2,243 events to this paper's 2,118-entry working file at a ± 1-year tolerance, with the residuals on both sides dominated by transliteration and naming variants (HCED's "Wali Kotal" for Babi Wali Kotal, "Bergendahl" for Bergendal). The substantive difference is the British-participation coding rather than coverage: HCED tags 502 in-window engagements as British against this paper's 474, and 443 name-year pairs match across the two. The HCED-only cases are led by exactly the categories the operational definition of Section 3.2 excludes: the Canadian-militia Riel Rebellion actions (Batoche, Battleford), privately engaged British officers (Cochrane at the Acropolis, the Miguelite-War naval actions), and American Civil War engagements with no Crown force (Cape Girardeau, Cherbourg), alongside further naming variants; the cases present here but untagged by HCED reflect its looser participant strings. This is the sense in which no British-specific source makes the dictionary look incomplete: the best available comparator is a sibling extraction of the same dictionary, and where the two disagree on what counts as British, the disagreements trace to the definitional choices that Section 3.2 states and defends.

Comparison with British-specific sources. No British-focused source functions as a battle-level census of the period. The official lists, army battle honors (Norman, 1911) and campaign-medal clasps (Hayward et al., 2006), read from the published compilations of those volumes, are selected on success by construction (Maiwand, Isandlwana, and Majuba Hill, all in the dictionary, appear in neither) and contain no battle-level entry the dictionary misses beyond three minor actions (Wana 1894, Perak 1875–76, and Eccles Hill 1870). The dictionary's coverage of small colonial policing campaigns is thinner than its coverage of set-piece engagements. It carries no entry for the Anglo-Zanzibar bombardment of 1896 or the Pahang rising of 1891–95, one-sided actions that carry no battle-level honor. These omissions

are a property of the dictionary's inclusion rule rather than of the extraction, which recovers every entry the dictionary contains. Fortescue (1899), the canonical history of the British Army, ends in 1870 and narrates campaigns rather than enumerating battles. The same pattern holds for Wikidata: of the 3,204 battle-typed Wikidata items dated 1816–1913, only 195 carry British-participant statements, against this paper's 474; fewer than half of the dictionary's 474 British battles have a Wikidata item of any kind.

In addition, the dictionary offers a codified inclusion rule applied uniformly at the battle level, coverage of defeats as well as victories, and a design that extends to the non-British battle pool underpinning the placebo tests.

B.4 Rank and Honors Taxonomy

The rank types matter for the analysis. Substantive rank governs the pay, prize-share, and commission-purchase interpretation used in the analysis, while the other ranks are recorded so that a temporary or honorary title is not mistaken for a permanent promotion. I verify substantive rank against gazetted promotions and the Army and Navy Lists wherever possible. The four categories are:

- *Substantive rank*: the officer's permanent position in the Army List or Navy List. Substantive rank determines pay bracket, prize-share entitlement, and eligibility for by-purchase promotion. Examples in the panel include Field Marshal (Wolseley, Roberts), Lieutenant-General (Napier), and Rear-Admiral (Rawson).

- *Brevet rank*: an honorary promotion that grants the title and precedence of the higher rank without changing pay or substantive position. It was frequently awarded after a successful campaign as a reward short of a full promotion (e.g., Brevet Colonel attached to a Major's substantive command).

- *Local rank*: a rank valid only in a specific theater or command. Outside that theater, the officer reverts to his substantive rank. Frequently used in colonial contexts where a junior officer was placed in temporary senior command (e.g., Local Brigadier-General in India).

- *Temporary rank*: a rank held for a specified interval, typically for the duration of a campaign or appointment. Upon expiry, the officer reverts to his substantive rank.

Distinguishing between these ranks matters because prize-share, pay bracket, and by-purchase promotion all follow the substantive rank, not the brevet or local rank. In the person-level panel, the rank-at-battle measure prefers the substantive rank when available

and otherwise uses the highest non-substantive rank; the substantive rank drives the rank-group fixed effects used in the probate regression.

British military honors and decorations recorded in the leader panel include, in decreasing order of prestige: Knight Grand Cross of the Order of the Bath (GCB), Knight Commander of the Order of the Bath (KCB), and Companion of the Order of the Bath (CB); analogous grades of the Order of St Michael and St George (GCMG, KCMG, CMG); the Order of the Star of India (GCSI, KCSI, CSI); the Order of the Indian Empire (GCIE, KCIE, CIE); the Distinguished Service Order (DSO); the Victoria Cross (VC); and foreign decorations. GCB and its equivalents were typically awarded to senior commanders upon or immediately after a successful campaign; KCB and CB were awarded more broadly. Because these post-nominal honors are typically awarded for battlefield performance, they appear on both sides of the analysis: as pre-treatment covariates (whether the officer already held an Order when a given battle was fought) and as post-treatment outcomes (whether a subsequent Order followed the engagement).

B.5 Leader Identification and Biographical Data

Leader identification. I identify military leaders in two stages. First, I extract all named British commanders from the 474 battle narratives in Jaques (2007). Each narrative typically identifies the senior officers on each side (e.g., "a British force under General Sir Herbert Kitchener"). A commander is a named senior officer whom the battle narrative identifies as leading a British force in the engagement; when the narrative names joint commanders, I retain each named commander. Commanders are fewer than battles because command repeats: Sir Colin Campbell, for instance, led fifteen of the battles. Second, for commanders mentioned only by surname or title in the dictionary, and for biographical details absent from the narrative text, I conduct targeted searches across a broad set of reference sources.

Biographical sources. The primary biographical references are: (i) Wikipedia, used as a first-pass source for dates, ranks, and career summaries; (ii) the *Oxford Dictionary of National Biography* (ODNB), which provides authoritative scholarly biographies for prominent British figures; (iii) the *Dictionary of Irish Biography*, the *Australian Dictionary of Biography*, and the *Dictionary of Canadian Biography*, used for leaders born or serving in those regions; and (iv) Encyclopædia Britannica for supplementary biographical context. Institutional military archives (the National Army Museum, the Royal Museums Greenwich, and the Imperial War Museum) provide service records, campaign histories, and regimental details. I also use genealogical databases, principally Ancestry, FindAGrave, and WikiTree, to verify or resolve dates of birth and death, particularly for less prominent officers.

Biographical variables. For each of the 317 identified leaders, I collect the following:

- *Dates*: year of birth and year of death. Birth year is missing for a subset of leaders; for these, I impute birth year using the median age at death among leaders with both dates observed.
- *Highest substantive rank attained*: the highest permanent rank attained during the leader's career (e.g., Field Marshal, General, Lieutenant-General, Major-General, Brigadier, Colonel).
- *Rank at battle*: the rank held at the time of each battle. Where sources permit, I distinguish substantive, brevet, local, and temporary ranks and record each separately. The analysis takes the substantive rank when available and otherwise the highest non-substantive rank.
- *Honors*: post-nominal honors as recorded in biographical sources (e.g., GCB, KCB, CB, KCMG, DSO).
- *Family background*: (i) an indicator for noble or royal descent, with details of the connection; (ii) whether the father served in the military, the father's name and highest rank; (iii) whether the leader purchased any of his commissions, with details of purchased ranks.
- *Service branch*: indicators for Royal Artillery and Royal Engineers, whose officers followed a distinct promotion track without purchase.
- *Birth place*: city and country of birth, used to construct indicators for birth outside the United Kingdom and for Scottish and Irish birth. Birthplace is recorded for 236 of the 317 commanders and is not confined to the home nations: 174 were born in England, Scotland, Wales, or Ireland and 62 elsewhere, 23 of them in British India, 18 in the settler colonies of Canada, southern Africa, New Zealand, and Australia, and 21 in other imperial and Crown territories or in continental Europe.

Command assignment. To establish which post a commander held when the campaign began, and since when, I read the appointment notices and dispatches in the *London Gazette*, the *Dictionary of National Biography* and its colonial counterparts, and campaign histories such as those of Kaye, Malleson, and Norman, and I use the online biographies listed above where these sources are silent. For the 126 probate-sample pairs in which the commander was stationed in or next to the theatre, the post and its date rest on the *Gazette* or a campaign history in 70, on a biographical dictionary in 17, and on online biographies alone in 39.

B.6 Probate Records: Collection and Processing

Institutional background. Probate records in England and Wales have been systematically maintained since 1858, when the Court of Probate Act transferred jurisdiction from ecclesiastical courts to a centralized civil system. Each year, the Principal Probate Registry published a calendar listing every individual for whom a grant of probate or letters of administration was issued. For the period 1858–1907, entries record the decedent's name, address, occupation or description, gross estate value ("effects"), and the name and relationship of the executor or administrator. The occupation entries record a precise trade or profession, such as *farmer*, *Private in Her Majesty's Army*, or *Bread Baker*. From 1908 onward, the occupation field was discontinued; entries record only name, address, estate value, and executor information. Descriptions that survive after 1908 are predominantly marital or social status, such as *widow*, *spinster*, or *gentleman*, and the same applies to the description of the administrator or executor.

Scraping. The UK Government's online probate search service provides digitized images of the annual probate calendars. Following the approach of Cummins (2021), I scrape these images for the full coverage period (1858–1996), obtaining 16.1 million individual records across 139 calendar years, an average of approximately 116,000 records per year. The service, run by HM Courts and Tribunals Service (2025), is available at `https://probatesearch.service.gov.uk`. The calendar images are Crown copyright public sector information released under the Open Government Licence v3.0, which permits copying and reuse with attribution. Coverage is similar in scope to Cummins (2021), but extends the start date from 1892 to 1858 and extracts additional structured fields.

OCR and extraction. Each probate-calendar page contains multiple entries in a dense, multi-column format, and many of the scans are white-on-black photostat negatives that defeat conventional line-based OCR engines. I therefore apply open-weights vision–language models (MiniCPM-V-4.5, with DeepSeek-OCR on part of the corpus), which read the page image with its layout and return machine-readable text robust to column breaks and inverted contrast. The OCR output is then processed by an open-weights large language model (`gpt-oss-20b`) that returns one structured record per decedent, with the following fields: full name, gross estate value, net value (where available), address at death, occupation or description (1858–1907 only), and the name and relationship of the administrator or executor.

Price deflation. Nominal probate values span nearly 140 years and must be converted to a common base for meaningful comparison. I use the UK Retail Prices Index (RPI) long-run series published by the Office for National Statistics (dataset MM23, series CDKO, base January 1974 = 100). This index extends from 1800 to the present. I deflate all nominal

values to pounds at 1900 prices by dividing by the ratio of the RPI in the year of death to the RPI in 1900.

Military candidates. To create a broad candidate file for the leader–probate linkage, I search the occupation field case-insensitively for the strings *general, lieutenant, major, marshal, colonel, captain, sergeant, admiral, commander, brigadier, corporal, private, ensign*, and *commodore*. I also flag records whose name or occupation field contains a post-nominal honor of the British orders of knighthood and military decorations, such as *KCB* or *DSO*. This screen yields 74,842 records. It is a search aid rather than the estimation sample: candidate matches are resolved using names and biographical details, and every linked leader value used in the analysis is checked against the original calendar page. The three-group comparison of Section 5.1 applies a stricter, curated screen over the 1858–1906 calendars, whose entries record occupation. I keep entries whose occupation names a military rank. I drop civilian uses of military-sounding words, such as "General Manager," "Master Mariner," and "Salvation Army." The screen yields the 13,556 officers of the *Officers in probate* group, present in probate but never recorded as leading a battle in the Jaques (2007) data. I then drop calendar records that match any battle commander by surname and death year, exactly or fuzzily after stripping diacritics, so the group is disjoint from the commander sample. Together with the 140 matched commanders falling inside the same calendars, these officers form the 13,696-record estimation sample of Table A.27.

Validation. This exercise measures the accuracy of the automated extraction over the digitized population. It is not the accuracy of the wealth data used in the analysis: every battle leader's probate entry is verified by hand against the original calendar page (Section 3.3). I draw 20 calendar pages at random from the digitized run and read every entry printed on those pages against the records extracted from them, 431 records in all. Every printed entry has an extracted record and every extracted record traces to a printed entry, so the extraction neither skips nor fabricates decedents on these pages. Of the 431 records, 379 (88.0 percent) reproduce name and value exactly, and 393 match the printed pounds figure digit for digit. Counting a value as correct when it falls within 10 percent of the printed sum, or when it is empty because the printed entry carries no sum, 423 of the 431 records (98.1 percent) are correct. The six value failures are digit misreadings that materially change the sum: a leading 3 read as an 8 (£322 becomes £822), an extra leading digit (£7,767 becomes £77,767), and one case where a handwritten marginal figure was captured in place of the printed sum. The 46 name errors carry the correct value in 44 cases and come almost entirely from two pages where a surname printed once at the head of a run of entries was dropped or truncated. Three further rounds of 20 pages each, 1,177 records, give

value accuracy of 89.1, 93.8, and 97.5 percent. Two of those rounds each contain one page that the pipeline returned empty, about 32 printed entries apiece, and one round contains a page whose values were shifted onto neighboring rows. Errors of these kinds add noise to the officer comparison group of thousands but cannot manufacture the commanders' premium, and the commander-side estimates hold under winsorizing and trimming the estates at the 99th percentile (Table A.19).

One feature of the early calendars deserves note. Entries granted in the first decades state a ceiling, "Effects under £1,500," rather than an exact sum: all 15 sampled records from pages dated before 1881 take this form. The extraction stores the ceiling in its own field, so population-level probate values for the early decades are properly read as upper bounds rather than point estimates. This does not affect the leader sample, whose values are read from the original entries by hand.

B.7 Leader–Probate Linkage

Linkage procedure. I manually match each leader to his probate record using the following protocol: (i) search the 74,842 military-candidate probate records for surname and approximate death-year matches; (ii) verify the match using first name, initials, rank, honors, and address; (iii) for ambiguous cases, cross-reference against biographical sources (ODNB, Wikipedia, FindAGrave) to confirm identity. The linkage narrows the 317 leaders in four steps. First, 59 died before the civil probate registry opened in 1858 and could never appear in it, a further thirteen do not enter the linkage, ten of them because no year of death could be confirmed, and three died in Scotland after 1936, beyond the end of the Scottish testamentary coverage used here; that leaves the 245 leaders who died within the coverage period. Second, I link 218 of those 245, a match rate of 89 percent. Third, 13 of the 27 unmatched were colonial officers who lived and died overseas and were unlikely to leave estates in Britain: seven died abroad, three in New Zealand, one abroad with his surviving family abroad, one abroad in the country of his birth, and one was killed in action overseas. Fourth, the search returned no grant under the commander's name for the remaining 14: twelve where nothing was found at all, and two officers born outside the United Kingdom whom I could not trace in the registries searched. Some of these men will have left estates too small to be worth a grant; others died on distant service with their affairs settled elsewhere. The bounds of Section 5.1 allow the missingness to be selective either way. For Scottish leaders, I supplement the England and Wales probate calendar with testamentary records from the National Records of Scotland; for Irish leaders, I draw on the Dictionary of Irish Biography and Irish probate archives.

Person-level aggregation. The final dataset has one observation per leader. Each distinct battle contributes once to every named commander of that battle. For each definition and time window, I classify the battle as artifact-heavy from the change in its matched city's post-battle artifact inflow relative to its pre-battle inflow, then sum those battle indicators across the commander's full battle history. Thus the probate regression uses a *count of artifact-heavy battles led*, not a direct sum of artifacts. The dataset also records the total number of distinct battles and the sums of the pre- and post-battle artifact counts; where battle windows overlap, those descriptive artifact sums may include the same acquisition in more than one battle window. Pre-determined controls for the probate regressions include birth decade, rank at first battle (an ordinal encoding of the substantive or highest non-substantive rank), rank-group category (Flag/General Officer, Senior Officer, Field Officer, Junior Officer), noble descent, father's military service, and commission-purchase history.

Additional checks on the commander regressions. Two details supplement the robustness checks of Section 5.1.1. The estimate for artifact-heavy battles inside the incident-triggered subset of Section 4.4.2 is also positive, and the incident-triggered and other coefficients are not statistically distinguishable ($p = 0.28$ in the controlled 20-year specification). The split is a sensitivity check rather than an instrument for campaign assignment. The death-timing patterns of Table A.26 are consistent with campaign gains accumulating over a surviving career.

B.8 Gazette Extraction Pipeline

The *London Gazette* is the United Kingdom's official public-notice journal. Published continuously since 1665, it records Crown commissions, promotions, prize-money distributions, military honors, and Admiralty Court decisions. I digitize the full run of the Gazette through 1914, 27,737 issues and 656,357 pages, and use the following four stages to build the officer-career data.

1. Issue coverage. The officer-career window, 1816–1870, contains 6,597 issue numbers. I convert the official PDFs to page-level text with the `dots.ocr` vision–language model. The official archive supplies usable PDFs for 6,531 issues (99.0 percent). The remaining 66 issues are unavailable there.

2. Identify officer notices. I classify each paragraph by its headings and text cues to identify sections such as the War Office, Horse Guards, and Admiralty. This step produces 21,929 officer-related text blocks across 5,723 issues.

3. Extract career events. An open-weights language model (Qwen3.6-27B in thinking mode) reads each officer-related block and returns one row per appointment, promotion,

retirement, transfer, or exchange. The model returns the requested machine-readable format for 99.3 percent of blocks. Each row records the issue and date, officer and regiment, ranks before and after, event and purchase status, effective date, honors, and any predecessor named in a *vice* clause (a notice saying that one officer replaces another). It also stores a quotation of at most 300 characters so that the row can be traced to the Gazette text.

I then join the block-level results, standardize equivalent forms (*kcb*, *K.C.B.*, and *Knight Commander of the Bath* all become KCB), and remove repeated notices. The final file contains 274,485 events covering 110,378 distinct officer-name strings. Of these, 102,368 are promotions. Among the promotions, 36,501 state whether they were by purchase, and 24,070 (66 percent) were.

4. Check the records. *Coverage:* 6,531 of the 6,597 issue numbers are available and processed. *Source support:* after normalizing spaces and punctuation, 98.3 percent of 273,690 testable stored quotations appear in the OCR text of their issue (96.9 percent verbatim). *Field accuracy:* in a fixed-seed audit of eighteen issues and 1,059 extracted rows, the officer's name and ranks are correct in 98.7 percent of matched rows. The name itself is never wrong, and the purchase channel is correct in 994 of 995 cases. *Recall:* a separate enumeration of all officer-career events in those issues finds that 98.5 percent of 1,010 events were extracted, and every extracted row has supporting Gazette text. Most missed events are departures mentioned only in the phrase saying that another officer replaces them. About six percent of rows describe the other officer in a two-sided exchange. This changes which side of the exchange a row represents but not the aggregate count of by-purchase movements used in the analysis. *OCR and institutional checks:* every page in a stratified 300-dpi spot check was legible and correctly transcribed. The Army's by-purchase share matches Bruce (1980)'s historical 66/34 split, and the data contain no by-purchase notice in the Navy, militia, volunteer, or other sections where commissions were not sold (Section 3.4). What these rates mean for the estimates is narrow. The analysis counts by-purchase promotions by regiment and year, so only the purchase-channel field can bias it, and there the audited error is one record in 995. A misread name or rank would matter for tracking individual officers across notices, which the regiment-year design does not do.

Auxiliary. Beyond the officer-movement file, the pipeline also produces auxiliary tables of related Gazette content: a prize-notice census, together with casualty notices, honors, regimental dispatches, and campaign-medal grants. For the census, a keyword search of all 656,357 pages for prize money, booty, head money, tonnage and slave bounties, prize rolls, the Prize Branch, and the Registry of the High Court of Admiralty returns 12,078 notice blocks, and language-model readers classify each block from its text: whether it is a prize

notice, the service, its stage (an account deposited, a payment, a recall of unclaimed shares, a Royal Warrant, a roll), the captor, the capture, the dates, the agent, the shares by class, and any stated total. A block that names no captor, capture, or fund is a fragment of the notice before it and is not counted, and a block is a reprint only when its whole text repeats one already read. The result is 7,895 prize notices, 7,627 naval or joint and 243 army, since the Admiralty Court was the only statutory prize venue. The naval notices resolve to 4,875 captures, 3,132 of them made in 1816–1913, and 1,591 of these state a share amount. A parser keyed to the private prize agents' wording found only 1,547 naval notices and none after 1864, because the Admiralty's Prize Branch took over distribution in 1854–56 and changed the wording. The army pots were announced under the Crown Office, Whitehall, Royal Hospital Chelsea, and India Office headings, and the Royal Warrant notices are the Mutiny-era army funds: Delhi and Lucknow in 1861, six smaller funds in 1862, and the Central India, Saugor, and Rajpootanah field forces in 1867. These inform the case studies but do not enter the main artifact regression.

Army prize funds. The prize table above rests on the Gazette's own prize headings and is almost entirely naval. To recover the army funds, I search all 656,357 pages for "prize money" and "booty," with tolerance for OCR variants, and for either word within 250 characters of about thirty campaign names, and I read every hit. The search returns 3,669 occurrences of "prize money" on 1,747 pages after 1815 and identifies 16 funds with Gazette evidence for wars fought between 1816 and 1913, and five more for Napoleonic-era campaigns whose distributions were gazetted after 1815. The full reading of the prize notices adds eight smaller funds with London notices: the Coorg fund of 1834, the Kelat and Nepanee fund of 1839, and the Mutiny-era warrants of 1862 for Dhar, Sarun (with Satassee), Shorapore, Nurgoond, Hulgullee, and Khandeish, with Dhar the largest at 771,010 rupees. Table A.1 lists all 24, from the Deccan booty of 1817–18 to the Peking prize of 1900, together with the three funds administered and gazetted in India, the Persia fund known from the India Office prize rolls, and the Pekin, Kumasi, and Mandalay booty that prize agents or a prize committee sold without a warrant. The table also carries the navy's Syria gratuity of 1840 and the Ras al-Khaimah booty of 1819. The eight smaller funds are not priced in the receipts below. Coverage is strongest in the decades after 1870, 66,000 to 91,000 pages a decade, so the near absence of army funds after Abyssinia is not an artifact of missing pages. The one later fund, the Peking prize of 1900, is known only from a 1902 Admiralty notice that refers to it, and its own distribution was not gazetted in London. For the funds whose warrant or distribution notices state the shares by rank, I record one row per fund and rank class with its source. The Deccan distributions of 1828, 1832, and 1847, the Delhi first distribution at 86 rupees a share, the Banda and Kirwee installments, and the Jhansi distributions come

from the Gazette, and the Bhurtpore ladder from the prize agents' table printed in Creighton (1830, pp. 144–150), whose figures Biddulph (1933, p. 230) reproduces. Where a warrant states a total but no rate, I impute the rate and flag it. Lucknow takes the Delhi rate, Kotah takes the Jhansi rate scaled by the ratio of the two warrant totals, and Abyssinia applies the Bhurtpore proportions to its £2,000. The ladders give the share of a rank class rather than a personal receipt, because the prize rolls do not name officers.

B.9 Commander Prize Receipts

Table A.24 lists the cash prize that the records imply for 29 of the 218 sample commanders, and this section describes how I find each sum, how I sort the sums into two tiers, and how I convert them to 1900 prices. The starting point is the ladder-based assignment of Appendix B.8, which prices a share only where the *London Gazette* prints a distribution schedule and the commander led a battle that the warrant names. That assignment leaves 64 commanders who fought in a campaign with a gazetted or literature-attested fund but hold no priced share, 19 because the fund printed neither a total nor a ladder and 45 because their battle falls outside the actions the warrant names.

Search. For each of the 64 I search Hansard, the *Calcutta Gazette*, the India Office prize rolls, *Allen's Indian Mail*, the regimental histories, and the commanders' biographies for an allocation that names the man or a printed rate that reaches his rank. The search prices 19 of them, and I set aside three admirals whose only prize was for Russian merchant vessels condemned at sea in 1854 and 1855, since captures at sea are a return to sea command rather than to a battle and the fund table of Appendix B.8 excludes them on the same ground. Nine more hold an entitlement that the sources state only by class, so that pricing it would require an assumption about the man's presence on the roll or the command he held, and nine hold an entitlement whose amount sits in archives I have not consulted. Two commanders of the Punjab campaign appear only in the total of the Mooltan fund of 1851, which the warrant states without a rate. The remaining 25 fought where no fund existed. The Sutlej and Gwalior campaigns paid donation batta in place of prize, which I count only where a source states it at the man's own scale, as for Harry Smith. The 1842 Afghan operations, Bihar, Rohilkhand, Oudh, Agra, and Cawnpore had no fund, the Crimean army drew prize only for Kertch, the First China War produced no distribution because the Canton ransom was ruled a droit of the Crown and spent on batta, and Hope Grant resigned his Pekin share of 1860 in favor of the men. These 25 are zeros in the record rather than gaps in it.

Two tiers. Tier 1 of Table A.24 holds the fourteen sums that a source states for the man himself: a Royal Warrant's fraction applied to the warrant's own total, a prize roll that

names him, a Hansard answer, or a biography. Tier 2 holds the fifteen sums that I compute from a per-rank ladder printed in the Gazette and the rank the commander held at the battle. Two of these borrow one input from a sister fund, since Wilson's Delhi share prorates the chief commanders' twentieth by his 93 of 141 days in command and Napier's Abyssinia share applies Bhurtpore's rank proportions to the Abyssinia fund. The tiers rest on the gazetted first-distribution rates, Rs 86 a share at Delhi, Rs 17 at Lucknow, and 1*l.* 4*s.* at Kotah, in place of the rates that the ladder-based assignment imputes from sister funds. Where later distributions were gazetted without a rate the sum counts the first installment only. I convert rupees at ten to the pound, deflate nominal sums to 1900 prices with the UK Retail Prices Index at the year of distribution, sum distinct allocations within a commander, and list each commander once. The inferred entitlements, the entitlements whose amounts I have not consulted, the fund totals, and the renounced Pekin share enter no total.

What the sums measure. The sums are the entitlements that the schedules imply rather than verified personal receipts, some distributions occurred after a commander's death, and booty settled on the spot never reached the Gazette, so the figures are lower bounds on what a campaign paid. Sales conducted to finance a prize fund belong to the prize channel and are not counted again as private sales in Section 5.1.2. The ratios in the text compare payments with wealth at death rather than with what survived to it. Over the 29 commanders the documented prize equals 15 percent of combined probate, and over the fourteen of tier 1 it equals 25 percent. Four commanders-in-chief hold 92 percent of the total, two-thirds of the 29 drew less than £300, and the mean ratio of prize to probate is 0.32 against a median of 0.02.

B.10 Auction Sale Catalogues

The Museum's register records what reached Bloomsbury. The sale catalogues show what the market absorbed between the battlefield and the museum. Figure 4 draws on Brill's *Art Sales Catalogues Online*, a digitization of the auction sale catalogues indexed by Frits Lugt's *Répertoire des catalogues de ventes publiques*, the standard bibliography of printed sale catalogues, from which I collect 27,751 catalogues covering sales from 1750 to 1900, in 32,568 scanned copies, and read every printed lot entry with a vision-language model, 14.5 million distinct lots after removing entries duplicated across copies of the same catalogue. Each lot record carries the catalogue, the sale date, the consignor named on the title page, the printed description, the section heading under which the lot was sold, and, where a contemporary hand priced the copy, the annotated hammer price and buyer. About 28 percent of lots carry such a price. The figure and Table A.33 use lots on pages in every language of the corpus.

Reading and coverage. The catalogues are scanned page images, and Figure A.27 reproduces parts of three pages with their handwritten prices and buyers. I convert each page with an open-weights vision-language model that returns one row per printed lot, with the lot number, the description, the section heading in force, and any handwritten price or buyer's name in the margin, and I compile the rows into a single table. Of the 900,279 pages, 99.3 percent return a usable reading, and 32,527 of the scanned copies yield lots. I assign language at the page level. I measure coverage against the union catalogue of art auction catalogues held by research libraries. Of the sales it records for the period, the scanned corpus holds 46 percent of those held at Christie's in London, 53 percent at Phillips, 20 percent at Foster's, 13 percent at Sotheby's, and 67 percent at the Hôtel Drouot in Paris.

Identifying campaign lots. I identify the campaign lots in two steps. First, a regular-expression pass over every lot flags candidates. Its vocabulary holds 37 campaigns in 351 spellings, 60 dispossessed rulers ("King of Oude," "Nana Sahib," "Tippoo"), the 875 battle names of the battle data, and taking language in English, French, German, Dutch, and Italian ("taken at the storming of," "captured at," "loot," "provenant du pillage," "erbeutet"). The pass flags 14,484 candidate lots in 3,630 catalogues. After removing duplicate scanned copies of one sale and sales held before 1816, 11,532 flagged lots in 2,984 sales of 1816–1900 remain. Second, language-model readers read every flagged lot and classify it. A lot counts when its own printed line states a taking, names the Yuanmingyuan, a campaign place, or a defeated ruler as the object's source, or is governed by a section heading that does so. Lots that merely depict or describe a war or a place (pictures, prints, books, maps, medals), that use a place as a style or manufacture name ("Delhi work," "laque de Pékin"), that record a collection credit rather than a source, or whose taker was not British are excluded. Because provenance in these catalogues is stated once and then carried ("taken from the same," "ditto," "de la même provenance"), the readers then read the pages around every retained lot, 23,613 lots on 989 pages in 184 catalogues, to settle how far each consignment runs, to resolve such references, and to drop retained lots that the neighboring text disproves. A property heading opens or closes a consignment ("The following were taken from the Summer Palace," "A DIFFERENT PROPERTY"), whereas a material heading ("BRONZES," "OLD JAPAN LACQUER") does not. Where a heading hedges ("Chiefly from the Summer Palace at Pekin," "partly captured at Lucknow"), the readers judged each lot by its object and kept 110 of 116. Four sales devoted entirely to Yuanmingyuan material are counted at the catalogue level: Lord Elgin's Christie's sale of May 1864 (86 lots) and Captain de Negroni's Paris sale of the same month (440 lots), both documented as Yuanmingyuan loot by Tythacott (2018b), the Chevrillon sale of February 1863, titled "Yuen-Ming-Yuen, Palais d'Été" (151 lots), and a Paris sale of May 1864 of objects "venant de Pékin" (119 lots). The result is 1,803 lots in 138 sales, 1,007

of them read one by one and 796 in the four sales. The readers also record the place of each sale from the catalogue's first pages, and where those pages name no place the language of the catalogue stands in: 95 of the 138 sales were held in Britain, 87 of them in London, and 24 in Paris. Two limits follow from the sources. The corpus ends in 1900, so the 1885 Mandalay material, which contemporaries record passing through museums rather than the salerooms, and any post-1900 resales are largely outside it. And the classification reads the cataloguers' own claims, which sellers had an incentive to advertise, so the counts measure objects marketed on campaign provenance rather than all campaign objects sold. Tythacott (2018b, p. 2, n. 5) counts 22 auctions at Christie, Manson and Woods and Phillips between April 1861 and February 1897 selling 1,329 objects, a count that includes the Elgin sale and excludes Foster's. Of the sales she names, the corpus holds Elgin's but neither the Phillips sale of 18 March 1861 nor Foster's Negroni sale of June 1866.

Prices. The handwritten prices are annotations in pre-decimal pounds, shillings, and pence whose column boundaries the OCR flattens into one string. The parser rejects non-monetary strings, reads marked guineas and shillings, and reads bare numeric columns from the left as pounds, shillings, and pence with range checks on shillings and pence, a rule justified by a tabulation of 331,806 priced English strings in which the third token is 0 or 6 in nine cases out of ten and the second token spreads over 0 to 19. Priced copies are rare. Of the 1,007 lots read one by one, 95 carry a price string in at least one scanned copy, and language-model readers first read each string in the context of its page, to set the currency, to decide whether a two-token string is pounds and shillings or shillings and pence, and to reject transcription artifacts. Because the transcription can also miss a mark or invent one, readers then examined the scanned page images themselves for every campaign lot, 243 pages in 141 copies, and read each margin directly. The image reading withdraws eleven of the string readings, among them a printed quantity column read as pounds, two amounts reported on a page that carries no handwriting at all, and a mark that belongs to the neighboring lot, and it adds eleven prices the transcription had missed, seven of them in one run under a Yuanmingyuan heading. The result is 85 lots with a hammer price, 83 of them legible, 77 in pounds, 5 in francs, and 1 in marks, converted to pounds at the exchange rate of the sale year. The median is £5 10s, and the 83 lots sum to £2,869, or £2,856 at 1900 prices and about £493,000 at 2025 prices. Forty-one of the 83 legible readings are of medium or low confidence, so the distribution is firmer than any single price. The largest, a pair of solid-gold Yuanmingyuan vases in the Allègre sale in Paris in 1872, reads as about 25,000 francs, between 21,200 and 29,200, because the second digit does not resolve at the scan's resolution. None of the 796 lots in the four whole-catalogue sales carries an annotation, so their prices rest on the literature. Tythacott (2018b) gives £1 to £10 for most lots of the

Elgin sale and £60 and £79 for its two top lots, and a hammer total of just over £1,479 for Captain de Negroni's three-day sale at Foster's in June 1866, a sale the corpus does not hold.

B.11 British Colony Indicator

The colonial-control tests in Section 4.6.1 use a city-year indicator for whether a city's coordinates fall under British rule in year t. I build it from the Cliopatria geospatial polity database (Bennett et al., 2025), a Seshat-affiliated dataset (2024 Zenodo release) that supplies year-keyed polygons for the world's polities. I retain the polities whose recorded name begins with "British" or equals "(British Empire)," the umbrella polity that aggregates British-controlled territory, together with the named subordinate polities such as the British Raj and the Cape Colony. For each populated place in the Natural Earth panel and each year, the indicator equals one if the place's coordinates fall inside the union of the British polygons active that year, expanded outward by a 10 km buffer to absorb coastline imprecision in the source polygons (Mumbai sits about 1.4 km outside the British Raj polygon).

I then correct the polygons against the historical record under a single rule, that ground Britain administered counts, whatever its legal form, and that jurisdiction over British subjects inside a functioning sovereign state does not. The check has two steps. First, an LLM screens every city-year assignment and flags suspicious cases, flips in and out of British rule, short spells, holes inside British territory, cities coded British inside countries Britain never ruled, and the coding of the places that matter most to the regressions. Second, I check each flagged city-year by hand against the dates of annexation and occupation and correct the polygons where they disagree.

The corrections are of two kinds. Polygon errors are places that the polygons miss or reach on the map. Cliopatria records only formal territorial control, so I add the extraterritorial administrations that the rule counts, the British and international concessions in China, from Shanghai and Tianjin to the Legation Quarter in Beijing and Weihaiwei, for the years each was under foreign administration,[97] the Japanese treaty settlements from 1859 to 1899, the Pacific island protectorates from the late 1880s, and Bushire under British military administration in 1856–57. I code by hand seven cities under continuous British rule that no polygon reaches, Toronto and Kingston in Upper Canada, Nassau, Basseterre, George Town, and Grand Turk in the Caribbean, and Corfu under the Ionian protectorate. In the other direction, I remove cities that a polygon or the buffer reaches only across a border (Mae Sot, Mae Hong Son, Satun, Algeciras, Shenzhen, and Chetumal), cities on ground

[97] The list follows the standard compilation of foreign concessions in China, https://en.wikipedia.org/wiki/Foreign_concessions_in_China.

Britain never administered (Porto-Novo, Awjilah before 1943, Kipushi, and Espungabera), and polygons that record an occupation or a personal union rather than administration, Kabul in 1840–41, Sevastopol in 1856, and the Hanoverian cities. The capitulations that gave Britain jurisdiction over persons in the Ottoman Empire, Persia, Siam, Korea, and Morocco stay out, as does the Anglo-French condominium in the New Hebrides. Time errors are British ground with the wrong dates. Egypt enters with the occupation of 1882 rather than Cliopatria's 1885 snapshot, Benin City with the 1897 expedition rather than the 1885 coastal claim, Durban, Pietermaritzburg, and Ladysmith with the 1843 annexation of Natal, Ulundi with the 1887 annexation of Zululand, and Kimberley and Aliwal North with their Griqualand West years of 1871 to 1899, while the Sindh cities run continuously from the 1843 conquest and United States cities leave in 1783. Where a city is British on both sides of a gap of at most two years, I fill the gap. The fill closes Cliopatria's withdrawal of the Raj polygon during the 1857–58 Mutiny for 51 cities, and longer gaps, such as the Transvaal and the Orange Free State, are genuine changes of sovereignty and stay.

B.12 Military Institution and Material Culture Measures

Table A.16 splits the city-year panel by two country-level capacity measures. The first proxies military professionalization with the V-Dem indicator of regular remuneration in the armed forces, from version 16 of the V-Dem dataset (Coppedge et al., 2026). The indicator measures the extent to which non-conscript armed-forces personnel are regularly paid a salary directly from state coffers, rather than compensated through fees, perquisites, or unpaid service.[98] I average the indicator over 1800–1900 within each country. The fixed window keeps the measure a stable country characteristic that does not depend on the timing of British battles. Panel cities carry modern country identifiers, so I assign each modern country the V-Dem coding unit that covered it in the nineteenth century. The second proxies historical material culture with the technology-adoption index of Comin et al. (2010) measured in 1500 AD, taken from the authors' published country dataset. Countries are matched to panel cities by modern ISO3 code. A few source rows lack codes and are filled by hand (England, Russia, and the Republic of the Congo), and the single Serbia and Montenegro record is assigned to both successor states.

Each measure is split at its median across matched countries in the main estimation universe of cities with either British battles or British Museum artifacts. The median uses

[98] V-Dem indicator `v2strenarm` in the version 16 country-year release. The survey question reads "To what extent are members of the armed forces salaried employees?", where a salaried employee is "someone who is employed on a contract and paid a regular allowance directly out of the state coffers," explicitly excluding unpaid work, work paid for through a private collection of fees, material perquisites or bribes, and private employment by a higher-ranking patron within the armed forces; conscripts are excluded from the question. Responses run from none or almost none salaried to all or almost all.

one observation per matched country rather than a city-weighted average, so large countries do not dominate the cutoff. Cities at or above the country-level median form the high group and the rest the low group. This yields 56 low and 56 high countries for the military-professionalization split and 57 low and 58 high countries for the material-culture split.

Two limits of the military-professionalization measure deserve statement. First, nineteenth-century coverage is uneven. Of the 112 countries carrying a value over 1800–1900, 34 host British battles. Forty-two rest on a single coded year, ten of them battle countries, while India, China, Afghanistan, Burma, Russia, Iran, Egypt, Ethiopia, and Japan carry the full century; coder counts are low throughout, most often one or two. Eight countries with British battles have no nineteenth-century value at all and drop out of the split, among them Sudan with 24 battles, Nigeria with 9, and Ghana with 8. Second, the values are coded for the nineteenth century itself and are not projected backward from post-independence observations: where a modern country was not then an independent state, I use the V-Dem coding unit that covered its territory in the period, as described above, and where V-Dem codes no such unit the country is simply missing.

The two splits are close to independent. Across the countries carrying both measures the correlation between the military-professionalization average and the material-culture index is 0.08, and among countries with British battles it is essentially zero; the median cross-tabulation is nearly balanced across its four cells. The professionalization measure is also only weakly related to income measured directly: its correlation with nineteenth-century GDP per capita from the Maddison Project Database is 0.19 across the 58 countries carrying both, and 0.22 for the 22 battle countries among them. The two splits therefore separate how developed a place's military institutions were from what it held, rather than splitting the sample twice on the same underlying wealth.

Table A.16 reports the heterogeneity. The previous-year battle coefficient is 3.984 below the median of military professionalization and 0.511 at or above it. It is 2.351 above the median of the material-culture measure and 0.264 below it. These are country-level median splits rather than location-specific designs.

B.13 Panel Construction Details

Spatial matching. Historical administrative boundaries are poorly standardized across countries and time periods, so no globally consistent set of subnational regions exists for the nineteenth-century world. I therefore use two complementary spatial units. Both the city-by-year and grid-cell panels require assigning each artifact and each battle to a spatial unit. For the city panel, I take the Natural Earth 10m populated-places layer (7,342 present-day reference places) and match each artifact coordinate and each battle coordinate to the closest

listed place by geodesic distance. Natural Earth is a public-domain dataset (https://www.naturalearthdata.com/), and its 10m populated-places layer favors regional significance over a population-census rule. I use the city panel for interpretable place names rather than for historical population measurement. Natural Earth is not a historical city census: the matched place may have been smaller, differently named, or absent during the study period. In the 139,657-artifact main sample, 91,767 artifacts (65.7 percent) are geolocated to a city or village, 17,434 (12.5 percent) to a state or province, and 30,456 (21.8 percent) only to a country. The grid-cell panel instead tiles the globe into 1-degree latitude-longitude cells; each point observation is assigned to the cell containing its coordinates, and only cells with at least one artifact or battle are retained. The city panel likewise retains only places with at least one artifact or battle.

Year variants. For battles spanning multiple calendar years, the aggregation produces three parallel sets of battle indicators corresponding to the start-year, end-year, and random-year assignment rules described in Appendix B.3. All three variants are carried through to the final panels; the baseline specification uses the start-year assignment.

Sample restrictions. The main sample applies four restrictions, each tied to the research design. I restrict battles and acquisitions to 1816–1913 because this is the institutional period between the Napoleonic Wars and the First World War in which the paper studies overseas imperial expeditions. The British Museum's collection only begins its steady growth in the nineteenth century, while the Napoleonic Wars and First World War were mass continental conflicts rather than the overseas expeditions central to the paper, and the endpoint also follows the Hague Conventions of 1899 and 1907, which introduced international restrictions on wartime seizure. I exclude artifacts from the United Kingdom and Ireland because the outcome is overseas cultural extraction. I require production no later than 1913 so an object existed during the study period, and I require an acquisition year and find spot because the analysis must place each artifact in both time and space. These restrictions leave 139,657 artifacts. The long-run panel extends acquisition years to 1750–2024 and contains 367,836 artifacts, because the decade design of Section 4.5 follows a city's acquisitions after its first British battle over a much longer horizon.

Proportional artifact distribution. The baseline specification assigns each artifact to the nearest listed place based on its geocoded coordinates, regardless of geocoding precision. A country-only record is therefore assigned near the geocoder's country reference point, often a present-day capital or administrative center that need not be the relevant historical city (Nigeria's reference point, for example, sits at Abuja, a capital that barely existed before 1976, rather than Lagos). This rule can concentrate imprecisely located artifacts in those

places. The precise-only, grid-cell, and proportional-distribution estimates are the relevant checks on the baseline city assignment.

As a robustness check, I implement a proportional-distribution algorithm that allocates imprecisely located artifacts across populated places within the same geographic unit. The algorithm operates as follows:

1. **Precise artifacts** (city or village level): assigned with weight 1 to their matched populated place, unchanged from the baseline.

2. **Country-level artifacts**: for each country, I compute each populated place's share of precise artifacts within that country (pooled across all years). Each country-level artifact is then distributed across places in proportion to these shares. When a country has no precise artifacts in the dataset, the artifact retains its baseline nearest-place assignment.

3. **State-level artifacts**: the same proportional-distribution procedure is applied within each state or province.

The resulting fractional-count outcome enters the estimates of Table A.5, and the main results are virtually unchanged.

B.14 Exhibition History Parsing

The ever-exhibited outcome and exhibition-rate comparisons use a binary flag derived from the catalog's exhibition-history column. The raw column is unstructured free text, typically a newline-separated list of venue-date-show entries, such as "2022–2023, 11 Oct – 8 Jan, Cambridge, Fitzwilliam Museum, Currencies of conflict and dissent." I flag any record with a nonempty entry after trimming whitespace. Of the 1,532,147 artifacts in the full catalog, 50,746 (3.31 percent) carry such an entry. The field can record dates and venues outside the British Museum, including loans, but the binary outcome uses any recorded exhibition across the artifact's history. It does not count exhibition events or restrict display to the years after a battle. Long-term gallery display and earlier exhibitions can be missing from the catalog. These omissions may differ across provenance groups, so applying the same flag does not ensure that their recorded exhibition rates have equal coverage. Section 4.7 and Appendix B.16 use this measure to describe the exhibition history of battle-related acquisitions.

B.15 Stacked Sub-Experiment Construction

The stacked estimates in Table 3 (columns 2 and 5) re-estimate the Poisson model using only the comparisons that the staggered-treatment literature permits. The British-battle

treatment is recurring and non-absorbing, so a two-way fixed-effects regression implicitly compares newly treated units to units treated shortly before, whose own post-battle dynamics contaminate the comparison. Following Cengiz et al. (2019), I remove those comparisons by restructuring the data rather than by changing the estimator. Each treatment event defines its own sub-experiment (a "stack") containing the treated units and a set of clean control units over a common seven-year event window. I append the sub-experiments and estimate the model on the appended data. Because stacking only reorganizes the data, the estimator itself is unchanged. The original application is linear, while I estimate by PPML throughout.

Two designs bracket the treatment definition. The *first-battle* design mimics staggered adoption. Each cohort year g is defined by units experiencing their first British battle in g, and the cohort's stack keeps event years $g-3$ through $g+3$. Treated units contribute only their own window, in their own stack, so their later post-battle years never serve as controls elsewhere. Controls are units whose first British battle falls after $g+3$ (not yet treated) or units that never host a British battle. Units treated before g are excluded, so no comparison against an already-treated unit enters. Cohorts within three years of the panel edges (first battles in 1816–1818 or 1911–1913) lack a complete event window and are dropped. Two stricter control definitions are reported alongside: never-treated units only, and never-treated units that additionally host no battle of any nationality inside the stack window.

The *episode* design matches the baseline specification's recurring treatment and supplies the stacked columns of Table 3. A stack is built around every British battle year b, again keeping event years $b-3$ through $b+3$. A treated unit enters the stack only if the episode is clean: the unit has no other British battle in $[b-6, b+3]$, with the lookback clipped at the 1816 panel start. A battle up to six years before b would otherwise carry its own post-battle dynamics into the new episode's pre-window. Unit-episodes failing the screen are dropped. Controls are units with no British battle anywhere in the same $[b-6, b+3]$ range. In the spirit of Dube et al. (2025), units treated in the distant past or future may serve as controls once their own dynamics have cleared. Excluding these units changes little. Columns 3 and 6 of Table A.34 re-estimate the episode design with the control pool restricted to units that never host a British battle anywhere in 1816–1913, which removes 219 of the 2,025 control cities and 231 of the 2,176 control cells, and the one-year-after coefficient moves from 2.694 to 2.710 in the city panel and from 3.220 to 3.248 on the grid, with no event-time coefficient moving by more than 0.07. The coefficient in Table 3 is the one-year-after effect from this design. Table A.35 adds a stricter screen that also drops, from the treated and the control set alike, any unit with a battle of another European power in the same range. I flag a non-British battle as a European-power battle when a European state other than Britain was a

belligerent, read from the belligerent names of the classification described in Appendix B.3, or when the battle was fought inside Europe. The screen removes four of the 201 clean city episodes and four of the 217 grid episodes, together with about one percent of the control observations, and leaves every event-study coefficient unchanged to the second decimal.

On the appended data, the treatment indicator is replaced by event-time indicators for treated units (event year -1 omitted), and estimation absorbs unit-by-stack and year-by-stack fixed effects. A unit serves as a control in many sub-experiments. A common unit or year effect would force a single intercept across all of that unit's appearances, which would let comparisons run between sub-experiments and undo the stacking. The same repetition is why the stacked columns of Table 3 carry 935,935 city-year and 1,006,096 grid-cell-year observations against 198,450 and 213,248 in the baseline: each appearance of a unit in a sub-experiment contributes an observation. Standard errors are clustered at the same levels as the baseline (state/province for cities, grid cell for grid cells). Every copy of a unit falls within a single cluster, so the repetition does not overstate precision. The pre-battle coefficients in Figure A.7 show no differential trends between treated units and their within-stack controls.

B.16 Scale, Exhibition History, and Historical Auction Values

This appendix documents the calculations in Section 4.7. I use the same find-spot assignments, acquisition dates, and battle-start years as the main analysis. The annual sample contains 139,657 artifacts acquired in 1816–1913. Of these, 8,654 originate in the 219 cities with a British battle. The 474 engagements occupy 316 distinct city-years. The extended 1750–2024 panel contains 367,836 artifacts. Counts refer to catalog records, which can contain several physical objects. I join provenance, exhibition, and price information using unique source-record identifiers and verify that the resulting counts reproduce every cell of the original annual and decade panels.

Observed windows and denominators. For a battle in year b, the short-run window $[b, b+3]$ contains four calendar years, including the battle year. I take the union of these windows within each city. For example, battles in 1858 and 1859 contribute 1858–1862 once. The union contains 2,172 artifacts and 363 ever-exhibited artifacts. These are 1.56 percent of all sample artifacts and 4.21 percent of its 8,616 ever-exhibited artifacts. Within battle cities, the corresponding shares are 25.10 percent of all acquisitions and 52.31 percent of the 694 ever-exhibited artifacts. I report shares of observed acquisitions throughout. An increase over counterfactual acquisitions would use a different denominator. The 1750–2024 panel holds 37,276 artifacts from the battle cities, including 1,725 ever exhibited, so the windows contain 5.83 percent of the all-time battle-city artifacts and 21.04 percent of their ever-exhibited artifacts. The battle cities contribute 10,022 city-years before their first battle

within 1816–1913, with 0.137 artifacts and 0.005 ever-exhibited artifacts per city-year, and 174 of the 217 cities observed before their first battle have no artifact in those years. The 1,108 city-years in the windows contain 1.960 artifacts and 0.328 ever-exhibited artifacts per city-year. Both rates count city-years with no acquisition.

Short-run attributable counts. Let $D_{i,t-h}$ indicate a British battle in city i in year $t-h$, and let $\widehat{\beta}_h$ denote the coefficient on that exposure in the annual PPML event study. For a city-year in the union $\mathcal{W}$, define

$$s_{it} = \sum_{h=0}^{3} \widehat{\beta}_h D_{i,t-h}, \qquad w_{it} = 1 - \exp(-s_{it}), \qquad \widehat{A} = \sum_{(i,t)\in\mathcal{W}} Y_{it} w_{it}. \tag{6}$$

Removing the four contemporaneous and lagged battle terms from the fitted log conditional mean multiplies that mean by $\exp(-s_{it})$. Equation (6) applies this proportional change to observed flows. I hold the fixed effects and lead indicators fixed. The exercise therefore inherits the event study's identifying assumptions and measures a partial change in the included battle exposures. It does not estimate a counterfactual without British imperial activity or allow collecting to move between cities.

The baseline coefficients for horizons zero through three are 0.620, 2.101, 0.833, and −0.113. Repeated battles can activate several terms in a city-year, so I combine them before taking the exponential. I retain negative weights. Applying this rule gives 1,582.6 attributed artifacts, compared with 1,474.1 under country-by-year effects. Applying the weights to fitted means instead of observed counts gives 1,562.8 and 1,456.1. The fitted calculation includes all supported battle-window cells, including those with zero observed acquisitions. It covers 688 city-years under baseline effects and 410 under country-by-year effects, both containing all 2,172 observed artifacts.

The confidence intervals use the joint covariance matrix of the four coefficients, clustered at the state/province level. Conditional on observed counts, the derivative with respect to $\widehat{\beta}_h$ is $G_h = \sum_{\mathcal{W}} Y_{it} \exp(-s_{it}) D_{i,t-h}$. I calculate the variance as $G'\widehat{V}G$. The resulting baseline interval is 1,206.3–1,958.9. It covers coefficient uncertainty conditional on the observed flows and specification. It excludes uncertainty about identification, catalog coverage, and the valuation model.

Provenance groups. I use the existing flags in Appendices B.18 and B.14. Military sources are people holding a British military rank. War-related notes and explicit taking language describe acquisition circumstances. These groups overlap and do not provide an exhaustive classification of loot. In the annual sample they contain 7,101, 1,886, and 385 artifacts, respectively. Their short-run window counts are 334, 478, and 345, including 36,

274, and 252 ever-exhibited artifacts. The explicit-taking window thus contains 89.6 percent of that provenance set in the annual sample. Within the windows, 737 artifacts either name a military source or carry a war-related note, 34 percent of the 2,172. War-related notes cover 22.0 percent of the window artifacts and explicit taking language 15.9 percent, and 292 of the 345 explicit-taking artifacts are from Benin City. The remaining 53 are from Kumasi and Magdala. Under the main price score, war-related and explicit-taking artifacts hold 40.5 and 30.2 percent of the window's value. Counting only the artifacts the Museum marks as taken would understate the battle-related inflow four- to seven-fold.

To allocate the aggregate effect, I replace Y_{it} in equation (6) with the count in each subgroup and retain the coefficients from the all-artifact outcome. This imposes a common attributable share within each city-year. The baseline allocation gives 249.6 artifacts from military sources, 294.2 with war-related notes, and 223.2 with explicit taking language. These overlapping amounts cannot be added. The corresponding exhibition allocation is 248.2, with a conditional 95 percent interval of 172.0–324.4. Its 15.7 percent exhibition share is about 2.5 times the sample rate of 6.2 percent. The exhibition history can contain dates and outside venues, but this binary outcome uses any recorded history without restricting its timing. It measures neither the number of exhibitions nor intrinsic object quality. Differences in catalog documentation can also affect comparisons.

The separate ever-exhibited count event study relaxes the common-response assumption and gives 326.4 attributed artifacts under baseline effects and 319.6 under country-by-year effects. These are alternative estimates of the exhibited response and cannot be added to the common-weight allocation. Estimating military-source counts separately gives 256.9 and 281.5.

Long-run magnitudes. Section 4.7 reads the pooled and fifth-decade coefficients of Table A.15 and Figure 3 as proportional effects, $e^{\theta} - 1$, which is approximate because the transformation also registers cities moving from zero to positive counts (Chen and Roth, 2024). Cities with no British battle acquire 5.2 artifacts per city-decade over the calendar decades in which the treated cities sit at horizons zero through five, and the battle cities 1.2 in the five decades before their battle decade, so a 12 to 19 percent effect is 0.6 to 1.0 artifacts per city-decade, or 800 to 1,300 artifacts over the 1,314 treated city-decades. For the any-acquisition indicator, cities with no British battle acquire at least one artifact in about one decade in five over the same calendar decades, and battle cities in 5.9 percent of their city-decades in the five decades before the battle decade. The pooled coefficient of 0.039 in column 6 of Table A.15 times the 1,314 treated city-decades gives the 51 additional city-decades with an acquisition quoted in the text.

Arrival lags and scaling. For the 35,840 artifacts that the Museum acquired from a battle city in or after the year of its first battle, I measure the lag as years since the most recent British battle in that city. The median lag is 89 years, and 6.1 percent of these artifacts arrive within the four-year window. Artifacts whose notes record explicit taking arrive with a median lag of one year, 77.2 percent within the window. Records with a war-related note have a median lag of two years, 63.9 percent within the window, and artifacts from military-titled sources a median lag of 25 years, 20.5 percent within the window. Dividing the attributed count of 1,582.6 by these shares gives 2,050, 2,477, and 7,722 artifacts. The calculation assumes that the attributable flow shares the arrival profile of the marked artifacts, which are selected, so it brackets rather than estimates the eventual inflow.

Historical auction equivalents. The valuation model combines realized prices from the Getty Provenance Index (J. Paul Getty Trust, n.d.) with high-confidence price annotations from Art Sales Catalogues Online. I convert local-currency prices to pounds at the sale year's exchange rate and then to 1900 purchasing power using the preferred consumer price index in the Bank of England's historical dataset (Bosch and van den Bos, 2026; Thomas and Dimsdale, 2017). If F_{ct} is local currency per pound and C_t the British price index, the harmonized price is $p^{1900} = p^{local} F_{ct}^{-1} C_{1900}/C_t$. Currency-regime and annotation checks govern label eligibility. This conversion measures purchasing power across sale dates and does not estimate appreciation in artifact prices.

I train a multilingual BERT model to predict log harmonized price from object descriptions, with sale year, location, and auction house entering separately. The eligible cohort contains 261,122 lots, including 161,125 training observations. ASCO annotations receive half the weight of Getty realized prices. Sale groups and known duplicate or accession links stay together across the training, tuning, calibration, and test partitions. Known Museum links and their connected groups are excluded. Auction lots enter through their printed descriptions and, for the Getty records, their object type, maker, materials, dimensions, title, and subject fields. Museum records enter through the catalog's description, title, object type, maker, authority, culture, production place and date, materials, technique, dimensions, inscription, denomination, and condition fields. Prices, buyers, and acquisition fields do not enter the description inputs. Museum predictions average predicted log prices over the same 32 historical sale contexts for every record. They do not assign a particular hypothetical sale date or house to an object.

The main score exponentiates the pooled log prediction. For sensitivity of sums, I multiply this score by the calibration-sample mean of the exponentiated log residual, 4.3373. This adjusted score is an auction-calibrated mean proxy used for sensitivity. Where a reviewed individual price is available, I use the latest usable sale by date in both scenarios. I do not

allocate a group-lot price in full to each Museum component.

All 2,172 battle-window artifacts rely on model predictions. Their combined main score is £21,609. The equal-value share of the 1,570 attributed artifacts, £15,600, is the figure in Section 4.7; applying the artifact-level count weights instead gives £15,050, and the adjusted score gives £65,275. Estimating the event study separately with the sum of main price scores as the outcome gives £16,228 under baseline effects and £12,915 under country-by-year effects, which relaxes the common count-weight assumption. The attributed value is 20.3 percent of the valuation of the 8,654 battle-city artifacts, and 5.25 percent of the £286,539 valuation of the 37,276 all-time battle-city artifacts. The 2025 figure in Section 4.7 multiplies the 1900-price figure by 172.7, the ratio of the 2025 to the 1900 value of the retail price index series described in Appendix B.6, which also prices the prize funds and campaign lots in Section 4.6.3.

The matched records provide the out-of-sample check. Accepted object or group links cover 488 Museum artifacts, 168 of them with usable reviewed individual prices, selected toward prints, drawings, and coins. The median multiplicative prediction error on them is 4.96, and 20.8 percent of predictions fall within a factor of two; using each matched sale's own context gives a median error of 7.95 with Museum text and 2.77 with auction text, so description transfer contributes most of the error. The held-out auction sample of 44,575 lots gives a log-price R^2 of 0.325 under the pooled policy used for Museum predictions. Individual predictions are therefore noisy, which is why the text uses the model for shares and totals rather than for single records. Repeated campaign-lot appearances and composite lots also prevent adding the separate campaign-auction counts or prices to these Museum valuations. The exercise leaves officers' cash receipts, objects outside the Museum, and losses to communities of origin unvalued.

B.17 Incident-Triggered Battles by Campaign

This section documents the 34 battles flagged as incident-triggered under the definition of Appendix B.3, grouped by campaign. Each entry states the anti-British act that set the campaign in motion, quoting the dictionary narrative of Jaques (2007) where it records the trigger, and then lists the flagged battles.

- **Corsair Wars.** Punitive naval expeditions against Barbary piracy and Christian slavery: in 1816, "responding to North African piracy," Lord Exmouth's fleet bombarded Algiers and the Dey's surrender "released more than 3,000 Christian prisoners." Fresh corsair attacks on shipping then brought "a renewed offensive against Barbary pirates" until "the Dey of Algiers sued for peace." *Battles: Algiers (1816); Algiers (1824).*

- **Third British–Maratha War.** Peshwa Baji Rao II "renewed war against the British by burning the Residency in Poona, then attacked" the British force outside the city. *Battle: Kirkee (1817).*

- **Anglo–Arab Wars.** Reprisals for attacks on British and allied shipping and forces: General Keir "renewed Britain's attack on piracy in the Persian Gulf," bombarding the Qawasim "pirate fortress" until "the Qawasim then agreed to end piracy." The 1821 expedition was sent "to avenge Britain's defeat in a rash attack against the Banu Bu Ali at Sur in November." *Battles: Ras al-Khaimah (1819); Balad Bani Bu Ali (1821).*

- **British–Maratha Wars.** Durjan Sal had seized the Bharatpur throne from the British-recognized heir. The siege ended when "the usurper Durgan Sal surrendered, ending the war." *Battle: Bharatpur (1825–26).*

- **First Opium War.** The battle came "two months after an attack on British merchants off Kowloon," when Captain Smith's frigates engaged the Chinese war-junk fleet in the Zhujiang River. *Battle: Chuanbi (1839).*

- **First British–Afghan War.** Two distinct triggers. The fortress-capital of the Baluchi ruler Mehrab Khan was stormed because he "had hindered the British expedition" to Afghanistan. The three 1842 battles were fought by the "Army of Retribution" that "marched into Afghanistan to avenge the murder of British soldiers and civilians from Kabul in January" (the destruction of the retreating Kabul garrison). *Battles: Kalat (1839); Jagdalak, 2nd (1842); Maidan (1842); Tezin (1842).*

- **First British–Sikh War.** The war opened when "a large Sikh army ... crossed the Sutlej into British East Punjab," an invasion of British territory. Both flagged battles were fought against the invading force. *Battles: Baddowal (1846); Aliwal (1846).*

- **Crimean War.** "When Russian guns at the Black Sea port of Odessa reportedly fired on the frigate Furious under a flag of truce a week after war was declared," Admiral Dundas bombarded the military port. *Battle: Odessa (1854).*

- **Second Opium War.** "Determined to punish China for seizing men off the ship Arrow," Admiral Seymour destroyed the Chinese fleet at Fatshan Creek. The Anglo-French force then "advanced on Guangzhou (Canton)," which yielded after brief bombardment. *Battles: Fatshan Creek (1857); Guangzhou (1857).*

- **Anglo–Persian War.** The war was fought "in response to Persia's capture of Herat in Afghanistan." *Battle: Khoosh-Ab (1857).*

- **British–Satsuma War.** "When the merchant Charles Richardson was killed," the British chargé "demanded redress from Prince Shimazu Hisamitsu of Satsuma, then ordered Admiral Augustus Kuper to bombard Kagoshima." *Battle: Kagoshima (1863).*

- **Second New Zealand War.** General Cameron attacked the fortified pā (a Māori stronghold) after "a nine-man military escort" was "ambushed and killed" on the disputed Tataraimaka block near New Plymouth. *Battle: Katikara (1863).*

- **Shimonoseki War.** Chōshū batteries had fired on Western merchant shipping and closed the strait to trade; the allied bombardment "forced Mori Motonori to open the Strait to western trade." *Battle: Shimonoseki (1864).*

- **British Expedition to Ethiopia.** Napier led a "punitive expedition against Emperor Theodore (Tewodros) of Ethiopia," who had imprisoned the British envoy and other European captives; after the field battle at Arogi the army stormed the mountain fortress and "Napier released the Emperor's British captives." *Battles: Arogi (1868); Magdala (1868).*

- **Second British–Afghan War.** "In response to the murder of Sir Louis Cavagnari, British Envoy to Afghanistan, General Sir Frederick Roberts was despatched to again occupy Kabul"; Roberts fought at Charasia on the approach and then defended the Sherpur cantonment against the tribal siege of his occupying force. *Battles: Charasia (1879); Sherpur (1879).*

- **British Conquest of Nigeria.** "Avenging the massacre at Ugbine (4 January), a 1,200-strong British Punitive Expedition under Admiral Harry Rawson converged on" Benin City; on the expedition's advance planning, see Hicks (2020). *Battle: Benin (1897).*

- **British–Sudan Wars.** Kitchener's army moved "up the Nile to reconquer the Sudan and avenge the death of General Charles Gordon at Khartoum in 1885." *Battle: Omdurman (1898).*

- **Boxer Rebellion.** "Boxers in Beijing murdered German Minister Klemens von Ketteler, then besieged the legations." The seven flagged engagements are the allied actions to relieve them: Seymour's blocked relief column at Langfang, the seizure of the Dagu Forts commanding the river mouth, the relief and then storming of Tianjin, the river actions at Beicang and Yancun, and the entry into Beijing. *Battles: Langfang (1900); Dagu Forts (1900); Tianjin, 1st (1900); Tianjin, 2nd (1900); Beicang (1900); Yancun (1900); Beijing (1900).*

- **British Conquest of Northern Nigeria.** "When British Resident Captain C. W. Moloney was murdered in the north at Keffi (3 October 1902), Commissioner Frederick Lugard sent Colonel William Morland" against the Emirate of Kano. *Battle: Kano (1903).*

B.18 War-Related and Explicit-Loot Provenance Sets

This appendix details the construction of the four provenance sets used in the provenance-gradient analysis of Section 4.6.2 (Table 6). The first set is the baseline estimation sample itself. The second set flags artifacts whose parsed acquisition source names a person holding a British military rank, using the acquisition-source parsing of Appendix B.1. I build the third and fourth sets from the catalog's free text. I scan only the acquisition and excavation notes, and exclude curators' comments. I sampled that field and found that war language in it overwhelmingly describes the scene a print or medal *depicts*, or appears in topical essays, rather than describing how the object was acquired.

War-related set. The notes must contain at least one of four marker families. The first family is an event construction, such as "siege of," "storming of," "bombardment of," "occupation of," "punitive expedition," or an "Anglo-" war name. The second is a curated list of campaign names and unambiguous event markers, including the Ashanti Expedition, the Indian Mutiny, the Opium and Crimean Wars, the Yuanmingyuan, Maqdala, Seringapatam, and Omdurman. The third is a military unit or a named naval vessel, including numbered regiments, the presidency armies, and any "HMS" prefix. The fourth is a conduit institution in the prize chain, such as the Foreign, War, India, or Colonial Office, the Admiralty, the Crown Agents, a colonial government, or the United Service Institution. To guard against false positives, I leave two categories unmatched. Bare battle-city names such as Delhi or Kabul never trigger the flag on their own. I also exclude generic "Expedition" constructions, which would sweep in scientific and ethnographic expeditions. The set covers 5,201 artifacts catalog-wide, of which 1,988 fall inside the 1816–1913 window, 1,886 of them in the estimation sample.

Explicit-loot set. This is a subset of the war-related set in which the notes record the taking itself. Qualifying language falls into two groups. The first is an explicit vocabulary of taking: loot, plunder, pillage, booty, spoils of war, sack of, capture, seizure, confiscation, war trophy, army sale, and the prize family (prize money, prize agent, prize court, prize committee, prize sale, naval prize). The second is directional taking syntax, such as "taken from," "taken at," or "taken out of." Directional syntax qualifies only when the same notes also contain a war-event word such as battle, siege, bombardment, mutiny, or campaign.

Audit and campaign classification. To verify that the explicit-loot set captures genuine wartime takings, I reviewed by hand every distinct note text matched by these patterns. The review led to four screens. Cataloging idioms do not qualify, so "descriptions taken from the labels" is not a taking. Narrative idioms do not qualify, so "the battle took place" and "a trip he had taken" are not takings. An "expedition" preceded by a scientific qualifier, such as oceanographic or ethnographical, does not count as a war-event word. Takings by civilians do not qualify, which excludes two Naukratis artifacts whose excavation notes describe locals looting the site in 1884–85. After the screens, the set covers 1,755 artifacts catalog-wide, 387 of them in the 1816–1913 window and 385 in the estimation sample. A hand classification attributes every in-window artifact to a named British military event. The sack of Benin City in 1897 accounts for 311 artifacts. Magdala in 1868 accounts for 36. The Anglo-Asante wars of 1873–74 and 1895–96 account for 28. The destruction of the Yok Obolo shrine in Southern Nigeria in 1904 accounts for 11. The remaining artifact is a silk painting purchased in 1889 whose notes repeat the seller's claim that it came from the sack of the Yuanmingyuan, an attribution the British Museum's own note doubts. Table A.17 reproduces a representative note for each of the four military events. Two caveats apply. The flag records the British Museum's own description of a taking, not an external adjudication of it. And a handful of the qualifying notes hedge the attribution, as in "said to have been taken." I read each of these rare hedged records individually in the hand review and keep them in the set.

Grid-level provenance gradient. Table A.36 reproduces the city-level provenance gradient of Section 4.6.2 at the $1^\circ \times 1^\circ$ grid level. The previous-year battle coefficient rises from 2.413 in the full sample to 4.265 for war-related notes and 4.693 for explicit loot, mirroring the city-level gradient. The explicit-loot estimate is identical in the city and grid tables: the set is concentrated in seven locations that each occupy their own city and their own grid cell, so both aggregations retain the same identifying observations.

Notes-based military flag. An earlier military-provenance indicator, covering artifacts whose acquisition chain references a British military officer, regiment, or named expedition, combined the source flag above with a notes search that no exhibit in the paper uses; I record it for completeness. I search the raw acquisition-notes and excavation-notes free-text fields for: (i) strong military nouns (regiment, battalion, cavalry, infantry, artillery, etc.); (ii) named campaigns (Benin Expedition, Crimean War, Indian Mutiny, Opium War, Anglo-$*$ War, Boer War, Mahdist War, etc.); (iii) regimental units (Nth Regiment, Royal Artillery, HMS $*$); and (iv) contextual markers (battle of, siege of, captured at, looted, plundered, prize money, spoils of war). I use negative lookaheads to drop noun-stemmed false positives, so that "marine" does not match "marine biology." I deliberately exclude common single-word

terms (major, general, officer, expedition, campaign) to avoid civilian false positives. An artifact flagged by both channels counts once, and the source channel dominates, with the overwhelming majority of the military signal coming from explicitly named military officers in the acquisition chain.

B.19 Mutiny Treatment and Control Regiments

The regiment panel of Section 5.2 is restricted to purchasable line and cavalry regiments with sustained *London Gazette* coverage. Artillery, engineers, marines, and Native and East India Company units, in which commissions were not sold, are dropped. Regiment keys are unified across the Gazette's cavalry renamings (Light Dragoons to Hussars or Lancers), and ex-East-India-Company lineages (the 100th–109th Foot, gazetted before 1861 in the East-India Register rather than the *London Gazette*) are excluded. Regiments in both groups must record at least 30 gazetted officer events and gazetted activity in the first and last six years of the window, so that renamed or newly raised corps cannot enter with artificial zero periods.

Among the regiments that pass these screens, I determined membership of each group from three sources read together: the per-battle rosters of the battle data, the regiments named in the *London Gazette* dispatch texts of 1848–1870 engagements, and regimental histories. The histories record service, such as siege-phase duty at Sevastopol, that generates no named-battle entry.

The strict design's treated group is the 25 regiments whose principal campaign was the Mutiny: regiments credited with substantial 1857–58 campaign service, excluding those with substantial Crimean combat (an 1854 field battle or a leading assault role), whose just-prior shock would contaminate the pre-trends. Brief late-1855 siege presence in the Crimea does not disqualify. The Sevastopol honor was awarded to every unit landed before the fortress fell. Regiments such as the Carabiniers (Meerut on the first night of the rising, then the Delhi campaign) or the 72nd Highlanders (Kotah) were Mutiny regiments with only token Crimean exposure. The 13th Foot, which landed in the Crimea in June 1855 and served only in the siege lines, is the same case. Two roster-named regiments with skirmish-only records and no Mutiny battle honor, the 35th and 92nd Foot, are excluded from the treated group. Crimean-veteran regiments with Mutiny service enter only the broad comparison, since their Crimean cycle sits inside the pre-period.

The strict design's control group is the 31 purchasable regiments credited with no substantial combat anywhere over 1848–1870. Exclusion requires positive evidence of fighting: a dispatch naming the regiment, or a documented assault or charge role. Token siege-phase Sevastopol presence therefore does not disqualify. Three regiments are excluded on that evi-

dence: the 3rd Dragoon Guards (named in the Magdala dispatch of 1868), the 9th Foot (led the left attack in the final assault on Sevastopol), and the King's Dragoon Guards (stormed the Taku Forts and charged at Baliqiao in 1860). The 16th Lancers are retained: the single roster entry placing them at Gujrat (1849) conflicts with the regimental record, which has them in England from 1846.

The broad comparison of Figure 5 and the alternative comparison sets of Figure A.29 use the same classifications: all 38 regiments with substantial Mutiny service, the 63 other regiments credited with any battle in the period, and the 44 regiments with no exposure to the Crimean War or the 1860 Beijing campaign. The last exclusion follows the artifact-heavy classification of Section 5.1. The Crimean and Beijing campaigns are the period's only other campaigns that are artifact-heavy at the 20-year window. The British Museum acquired over 300 artifacts from Kerch and 139 from Sevastopol after 1855, and 178 from Beijing after 1860, against single digits for the New Zealand, Burma, and Cape campaigns. Regiments exposed to those two campaigns therefore carried a spoils shock of their own. The panel covers 1848–1868, and purchase notices are observable and linkable to named regiments through 1870, before the Cardwell reforms abolished commission purchase with effect from 1 November 1871.

The final classification is as follows. The treated regiments are the 2nd and 6th Dragoon Guards, the 7th and 14th Hussars, the 9th and 12th Lancers, and the 5th, 8th, 10th, 13th, 32nd, 37th, 52nd, 53rd, 60th, 61st, 64th, 72nd, 75th, 78th, 80th, 82nd, 83rd, 84th, and 86th Foot. Each is credited at a named 1857–58 engagement by the battle rosters and carries a substantial Mutiny campaign record in the regimental histories, and 19 of the 25 are additionally named in the *London Gazette* campaign dispatches; no source contradicts an assignment. The control regiments are the Life Guards, the Royal Horse Guards, the 7th Dragoon Guards, the 10th and 15th Hussars, the 16th Lancers, the 1st, 2nd, and 3rd West India Regiments, and the 11th, 15th, 16th, 22nd, 25th, 27th, 36th, 39th, 48th, 54th, 56th, 58th, 66th, 69th, 76th, 81st, 85th, 87th, 89th, 94th, 96th, and 98th Foot. Each was checked against the same three sources: none is named in the dispatch texts, and the only combat credits that surfaced are the token siege-phase Sevastopol presence of the 10th Hussars and the 39th, 48th, 56th, and 89th Foot, and the 16th Lancers' overridden Gujrat roster row, neither of which meets the positive-evidence standard. The regiments in neither group fail one of the two rules on documented evidence: the sixteen Crimean-veteran Mutiny regiments through an 1854 field-battle or assault record, the 35th and 92nd Foot through the missing Mutiny battle honor, and the 3rd Dragoon Guards, the 9th Foot, and the King's Dragoon Guards through the dispatch namings and assault roles described above.

Benchmark against the battle honors record. Table A.37 sets the two groups against the published record of battle honors, which is an external classification of Mutiny service that the roster did not use. The Crown granted four honors to British line and cavalry regiments for the 1857–58 campaign: Delhi 1857, Defence of Lucknow, Lucknow, and Central India. Norman (1911) compiles the grants, and I read each regiment's honors from the online regimental honor rolls that reproduce his roll, checked against his lists and the National Army Museum and regimental museum pages where they exist. Twenty-three of the 25 treated regiments hold a Mutiny honor. All 31 control regiments hold none. The honors record agrees with the group assignment for 54 of the 56 regiments.

The 13th and the 37th Foot are the two treated regiments without an honor. The 13th Foot reached Calcutta in October 1857 and fought one gazetted action, the relief of Azamgarh under Lord Mark Kerr in April 1858. The 37th Foot arrived in June 1857, lost 62 men killed and missing in the fighting near Arrah that July, and took a color from the mutinous 28th Bengal Native Infantry at Natherpur in April 1858. The Crown granted neither regiment an honor. Both are named in the *London Gazette* campaign dispatches, which is the positive evidence on which the roster credits them, and that naming is what separates them from the 35th and 92nd Foot, which the roster excludes.

The control side shows the reverse pattern. Twelve of the 31 control regiments stood in India during the rising or reached it within months, and the Crown gave none of them an honor. The 56th Foot garrisoned Bombay and saw no active service. The 81st Foot disarmed the Lahore sepoys without a shot. The 98th Foot returned to India in 1858 and joined the Sittana Field Force on the frontier. Presence in the theater and combat credit come apart in the way the roster's positive-evidence rule assumes.

One caveat governs the comparison. The Crown granted honors for successful actions and later added grants that regiments lobbied for, so the benchmark corroborates the roster rather than replacing it.

Other campaigns of the purchase era. The design is not specific to the Mutiny. I use the Mutiny because it combines the largest gazetted army prize fund of the purchase era with a treated cohort whose pre-campaign purchase record is clean. The Crimean and 1860 Beijing campaigns are the era's other artifact-heavy episodes, and Table A.29 uses regiments untouched by them as a comparison set. Appendix B.20 applies the same design to the First Afghan War, the other campaign of the era with documented prize and with treated and control groups that survive an audit to the Mutiny standard.

Robustness of the purchase response. Table A.29 and Figure A.30 report the checks on the strict design. No single regiment carries the response: dropping each of the 56 in

turn leaves the estimate between 1.59 and 2.14 and significant at least at the 10 percent level (Figure A.30). It does not depend on the scale of the count, holding under winsorizing at the 99th percentile and when purchases are normalized by each regiment's own pre-campaign officer traffic (Table A.29, Panel C, columns 1 and 2). Nor does it depend on the composition of the groups, surviving the exclusion of the cavalry and of the two regiments whose Crimean service stopped short of a field battle (Panel D). Four control regiments carry in-window fighting that the battle workbook does not record: the 94th Foot suppressed the Mappila risings of 1849, and the three West India Regiments stormed Sabbajee in the Gambia in 1853. Dropping them leaves the estimate at 1.696, significant at the 10 percent level (Panel D, column 3). A wild cluster bootstrap by regiment returns a p-value of 0.031 against the analytic 0.030 (Panel C, column 3).

B.20 A Further Campaign: the First Afghan War

A single campaign leaves open whether the purchase response is particular to the Mutiny. This appendix applies the design of Section 5.2 to one other campaign of the purchase era that combines a documented payment to the troops with treated and control groups that survive an audit to the Mutiny standard, the First Afghan War of 1839 to 1842. The window opens eight years before the campaign and closes ten years after its final year. The base year is the campaign's final year, the campaign years sit in the pre-period, and the estimates carry regiment and year fixed effects with standard errors clustered by regiment.

The First Afghan War. The treated group is the five purchasable regiments with substantial, honor-bearing service in the war. The 13th Foot led through the blown Kabul Gate at Ghuznee in 1839, held Jalalabad through the winter of 1841 to 1842, and marched with Pollock to Kabul, losing 4 officers and 62 men killed over the war. The 2nd and 17th Foot supplied the Ghuznee storming party and the two storming columns at Kelat in November 1839, the 2nd taking the heaviest loss of any regiment in the assault on Ghuznee. The 41st Foot held Kandahar under Nott and marched on Ghuznee and Kabul in 1842. The 44th Foot was the only regiment of the line at Kabul and was destroyed on the retreat at Gandamak in January 1842, losing 22 officers and 645 men. The control group is the 67 purchasable regiments that fought nothing between 1831 and 1852, and the audit strikes the roster's spurious credits to the 31st Lancers and the 35th Foot, which are the 1st Bombay Light Cavalry and the 35th Bengal Light Infantry. Three of the five treated regiments had fought in Burma in 1824 to 1826, so the Burmese prize of that war sits two to five years before the window opens, a level in the pre-period rather than a trend. The Ghuznee prize roll gives £379 to a major-general, about £30 to a captain, and five shillings to a private, the Kelat booty was about £10,000 in all (Table A.24).

Results. Figure A.31 plots the event study and Table A.30 reports the estimate with the strict Mutiny design re-estimated on its published panel for scale. Purchases in the treated regiments rise by 1.82 a year over 1843 to 1852, 46 percent of their pre-campaign rate against 45 percent for the Mutiny, and the pre-campaign coefficients show no trend.

The war's prize was gazetted but smaller than the Mutiny's, whose Royal Warrants sum to about £1.2 million, and the purchase market moved in the same direction. The case therefore replicates the purchase response in a second prize-bearing campaign, while the evidence that ties the response to the scale of spoils remains the Mutiny's own: a response of the same size in a cohort whose funds were documented and the commander estates of Section 5.1.

References Not Cited in the Main Text

Allen, Douglas W., "The British Navy Rules: Monitoring and Incompatible Incentives in the Age of Fighting Sail," *Explorations in Economic History*, 2002, *39* (2), 204–231.

Bosch, Reinoud and Koen van den Bos, "Exchange Rates to UK Pound," DataverseNL, 2026. Version 3.1. https://doi.org/10.34894/5NLBWR. Accessed September 7, 2026.

Callwell, C. E., *Small Wars: Their Principles and Practice*, 3rd ed., London: His Majesty's Stationery Office, 1906.

Caygill, Marjorie and John Cherry, *A. W. Franks: Nineteenth-Century Collecting and the British Museum*, London: British Museum Press, 1997.

Clarke, John, "On the Road Back to Mandalay: The Burmese Regalia — Seizure, Display and Return to Myanmar in 1964," in Louise Tythacott and Panggah Ardiyansyah, eds., *Returning Southeast Asia's Past: Objects, Museums, and Restitution*, Singapore: NUS Press, 2021, pp. 111–138.

Court of Queen's Bench, "Ex parte Sir Charles James Napier," 18 Q.B. 692; 118 E.R. 261, 1852.

Creighton, J. N., *Narrative of the Siege and Capture of Bhurtpore, in the Province of Agra, Upper Hindoostan*, London: Parbury, Allen, and Co., 1830.

Dalrymple, William and Anita Anand, *Koh-i-Noor: The History of the World's Most Infamous Diamond*, London: Bloomsbury, 2017.

Finn, Margot C., "Material Turns in British History: II. Corruption: Imperial Power, Princely Politics and Gifts Gone Rogue," *Transactions of the Royal Historical Society*, 2019, *29*, 1–25.

———, "Material Turns in British History: IV. Empire in India, Cancel Cultures and the Country House," *Transactions of the Royal Historical Society*, 2021, *31*, 1–21.

Fortescue, John W., *A History of the British Army*, London: Macmillan, 1899. 13 vols., 1899–1930.

Gavin, R. J., *Aden Under British Rule, 1839–1967*, London: C. Hurst & Co., 1975.

Hayward, John, Diana Birch, and Richard Bishop, *British Battles and Medals*, 7th ed., London: Spink, 2006.

J. Paul Getty Trust, "Getty Provenance Index," n.d. Sales catalogs database. https://www.getty.edu/research-conservation/tools-databases/provenance/. Accessed September 7, 2026.

Jacobs, Justin M., *The Compensations of Plunder: How China Lost Its Treasures*, Chicago: University of Chicago Press, 2020.

Kaye, John William and George Bruce Malleson, *Kaye's and Malleson's History of the Indian Mutiny of 1857–8*, Vol. 5, London: W. H. Allen, 1889.

Kopytoff, Igor, "The Cultural Biography of Things: Commoditization as Process," in Arjun Appadurai, ed., *The Social Life of Things: Commodities in Cultural Perspective*, Cambridge: Cambridge University Press, 1986, pp. 64–91.

Masson, David, *The British Museum, Historical and Descriptive*, Edinburgh: William and Robert Chambers, 1850.

McPherson, Duncan, *Antiquities of Kertch, and Researches in the Cimmerian Bosphorus*, London: Smith, Elder and Co., 1857.

Napier, William Francis Patrick, *History of General Sir Charles Napier's Administration of Scinde, and Campaign in the Cutchee Hills*, London: Chapman and Hall, 1851.

Norman, C. B., *Battle Honours of the British Army, from Tangier, 1662, to the Commencement of the Reign of King Edward VII*, London: John Murray, 1911.

Parliamentary Papers, "Deccan Prize Money," Hansard, House of Commons, 3rd ser., vol. 14, cols. 1136–1156, 6 August 1832. https://api.parliament.uk/historic-hansard/commons/1832/aug/06/deccan-prize-money.

Petrie, Donald A., *The Prize Game: Lawful Looting on the High Seas in the Days of Fighting Sail*, Annapolis, MD: Naval Institute Press, 1999.

Reba, Meredith, Femke Reitsma, and Karen C. Seto, "Spatializing 6,000 Years of Global Urbanization from 3700 BC to AD 2000," *Scientific Data*, 2016, *3*, 160034.

Thomas, Ryland and Nicholas Dimsdale, "A Millennium of UK Data," Bank of England OBRA dataset, version 3.1, 2017. Preferred consumer price index, sheet A47. https://www.bankofengland.co.uk/statistics/research-datasets. Accessed September 7, 2026.

Wilson, David M., *The British Museum: Purpose and Politics*, London: British Museum Publications, 1989.

Appendix C Additional Tables and Figures

Figure A.1: British Museum Online Collection: Provenance Record

Object Type
bell

Museum number
Af1897,-.498

Description
Bell; lost-wax cast in brass. Quadrangular in form with slightly flaring sides and strap handle. Decorated on front panel with leopard's face in low relief with background of concentric arches and stippling. Side panels have angled interlace patterns with stippling, back panel has lozenge pattern with inset circular wheels. Each panel bordered by plaitwork. Iron…

View more

Production ethnic group
Made by: Edo

Production date
18thC (circa)

Production place
Made in: Benin City
Africa: sub-Saharan Africa: Nigeria: Edo State: Benin City

Excavator/field collector
Field Collection by: Major William Alexander Crawford Cockburn

Findspot
Found/Acquired: Benin City
Africa: sub-Saharan Africa: Nigeria: Edo State: Benin City

Materials
brass
iron

Technique
lost-wax cast

Dimensions
Height: 21.10 centimetres
Weight: 1528 grammes
Width: 11.20 centimetres
Depth: 12.80 centimetres

Inscriptions
Inscription type: inscription
Inscription position: label on back panel
Inscription language: English
Inscription content: 97-498. Benin City. C.F. 18 June 1897. Cockburn.
Inscription note: Registration number. Findspot. Christy Fund. Date of acquisition. Name of vendor.

Curator's comments
Read & Dalton 1899:
Bell of cast brass, square in form, with flat loop handle; each face has a design produced by means of a punch; the front has a scale pattern, with a leopard's face in relief in the middle. On the two sides is a trellis pattern, and on the back a lozenge design with rosettes; raised borders; iron clapper.

The workmanship and…

View more

Bibliographic references
Barley 2010 / The Art of Benin (p.65, fig. 43)
Read & Dalton 1899 / Antiquities from the City of Benin and from other parts of West Africa in the British Museum (pl VI.9)

Location
Not on display

Exhibition history
Exhibited:
1970-1973, 15 Dec - 14 Oct, London, Museum of Mankind, Divine Kingship in Africa
1991 Feb-Apr, Norwich, Sainsbury Centre for Visual Arts, Man and Metal in Ancient Nigeria
1993-1997 15 Dec - 31 Dec, London, Museum of Mankind, Great Benin: a West African Kingdom

Condition
Good; burnt in casting repairs on back panel of bell.

Subjects
wild cat/big cat

Acquisition name
Purchased from: Major William Alexander Crawford Cockburn

Acquisition notes
During the British expedition to Benin City (Edo) in 1897 objects made of brass, bronze, ivory, coral, and wood were looted by British soldiers from the royal palace, its storerooms, and compounds.

Some of these objects were sold or exchanged in West Africa. However, many were brought to the UK where they were retained by soldiers of the expedition and subsequently inherited by their families; put up for auction; or donated, lent, or sold to museums.

See Collection File: Af1897,-.498-563.

Department
Africa, Oceania and the Americas

Registration number
Af1897,-.498

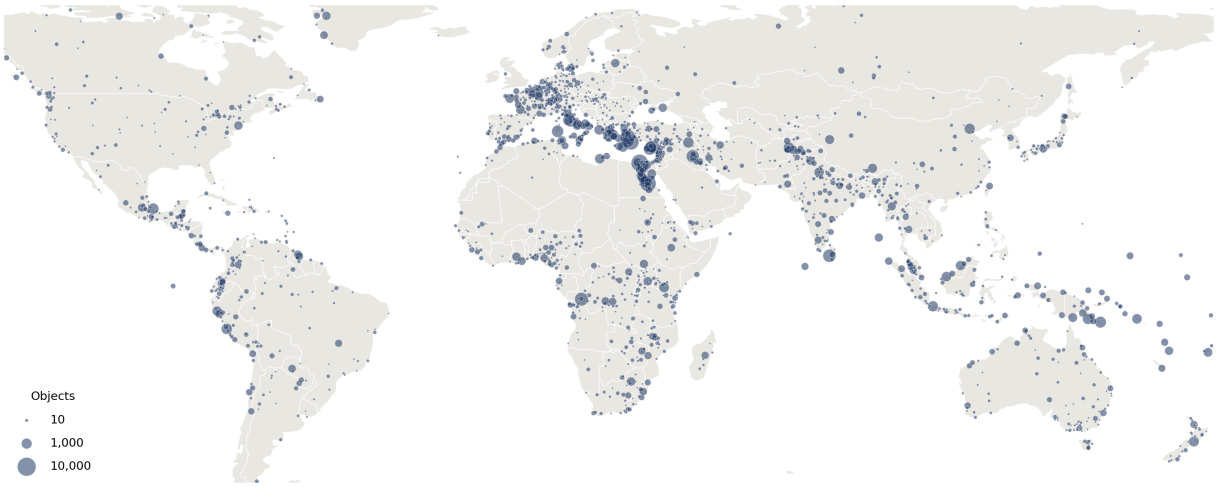
Additional IDs
CDMS number: Af1897C3.498 (old CDMS no.)



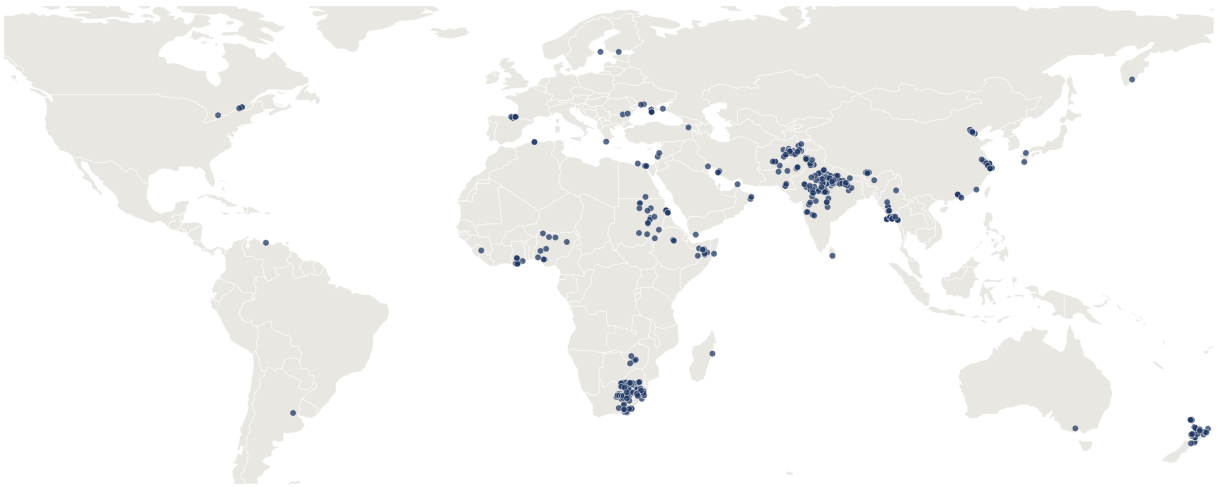
Note: Screenshot of the Museum's online record for object Af1897,-.498, a brass bell taken at Benin City in 1897 and purchased by the Museum from Major William Alexander Crawford Cockburn, an officer of the expedition. The four columns reproduce the fields of the record in the order the website lists them, with the acquisition notes expanded, and the right-hand panel shows the Museum's photograph of the object. The associated-events field, which repeats the curator's comments, is omitted. Source: https://www.britishmuseum.org/collection/object/E_Af1897-498, accessed September 2026.

Figure A.2: Geography of Artifact Origins and British Battles

(a) Artifact origins



(b) British battles



Note: Top: 1,941 populated places supplying 139,657 analysis artifacts, with dot area proportional to artifacts. Bottom: 474 British battles. Both cover 1816-1913. These maps describe coverage and are not an identification test.

Figure A.3: An Entry in Jaques' *Dictionary of Battles and Sieges*

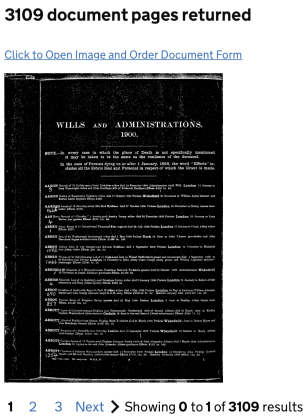
Benin ❙ 1897 ❙ British Conquest of Nigeria

Avenging the massacre at **Ugbine** (4 January), a 1,200-strong British Punitive Expedition under Admiral Harry Rawson converged on King Oba at Benin City in modern Nigeria, whose army was destroyed by Maxim guns and artillery. King Oba's capital was razed and he was exiled. His son-in-law Ologbosheri was eventually captured and executed for the attack at Ugbine (18 February 1897).

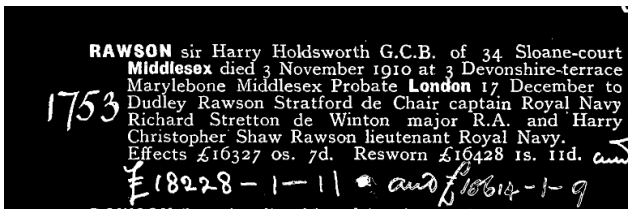
Note: The entry for the 1897 Benin expedition, reproduced from Jaques (2007). The heading gives the battle name, the year, and the war. The narrative names the commander, the belligerents, the location, and the outcome, and cross-references related entries in bold.

Figure A.4: Probate Data: Collection and Processing

(a) Calendar page layout



(b) Enlarged commander entry



(c) OCR transcription

RAWSON sir Harry Holdsworth G.C.B. of 34 Sloane-court Middlesex died 3 November 1910 at 3 Devonshire-terrace Marylebone Middlesex Probate London 17 December to Dudley Rawson Stratford de Chair captain Royal Navy Richard Stretton de Winton major R.A. and Harry Christopher Shaw Rawson lieutenant Royal Navy. Effects £16,327 0s. 7d. Resworn £16,428 1s. 11d.

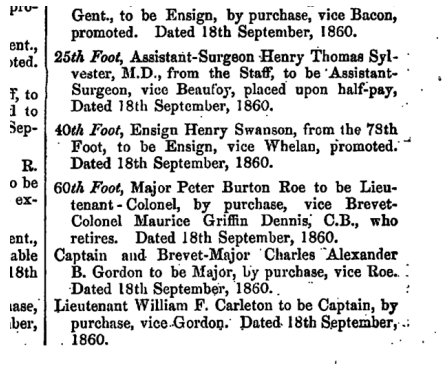
(d) Structured record

Name: Harry Holdsworth Rawson
Address: 34 Sloane-court, Middlesex
Died: 3 November 1910
Probate: London, 17 December 1910
Effects: £16,327 0s. 7d.
Resworn: £16,428 1s. 11d.
Executors: Dudley de Chair; Richard de Winton; Harry Rawson

Note: Panel (a) shows the calendar-page layout returned by the UK Government probate search. Panels (b)–(d) enlarge, transcribe, and structure Admiral Sir Harry Holdsworth Rawson's source entry. The analysis reads each linked commander's wealth from the original entry; the population extraction covers 1858–1996. Source: https://probatesearch.service.gov.uk. Contains public sector information licensed under the Open Government Licence v3.0.

Figure A.5: London Gazette: Representative Officer-Movement Notices

(a) Example notices



Gent., to be Ensign, by purchase, vice Bacon, promoted. Dated 18th September, 1860.

25th Foot, Assistant-Surgeon Henry Thomas Sylvester, M.D., from the Staff, to be Assistant-Surgeon, vice Beaufoy, placed upon half-pay, Dated 18th September, 1860.

40th Foot, Ensign Henry Swanson, from the 78th Foot, to be Ensign, vice Whelan, promoted. Dated 18th September, 1860.

60th Foot, Major Peter Burton Roe to be Lieutenant-Colonel, by purchase, vice Brevet-Colonel Maurice Griffin Dennis, C.B., who retires. Dated 18th September, 1860.

Captain and Brevet-Major Charles Alexander B. Gordon to be Major, by purchase, vice Roe. Dated 18th September, 1860.

Lieutenant William F. Carleton to be Captain, by purchase, vice Gordon. Dated 18th September, 1860.

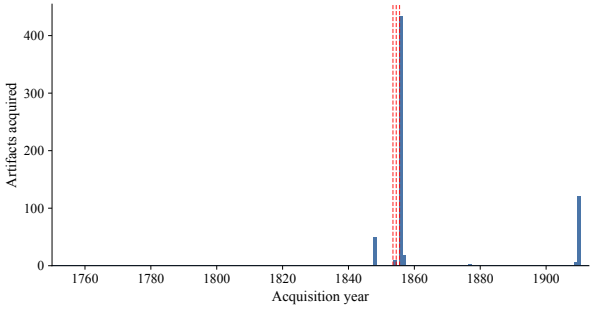
(b) Example LLM result

person_name	rank_from	rank_to	regiment	event_subtype	vice_name	event_date
Henry Thomas Sylvester	Assistant-Surgeon	Assistant-Surgeon	25th Foot		Beaufoy	18 September 1860
Henry Swanson	Ensign	Ensign	40th Foot		Whelan	18 September 1860
Peter Burton Roe	Major	Lieutenant-Colonel	60th Foot	by purchase	Maurice Griffin Dennis	18 September 1860
Charles Alexander B. Gordon	Captain and Brevet-Major	Major		by purchase	Roe	18 September 1860
William F. Carleton	Lieutenant	Captain		by purchase	Gordon	18 September 1860

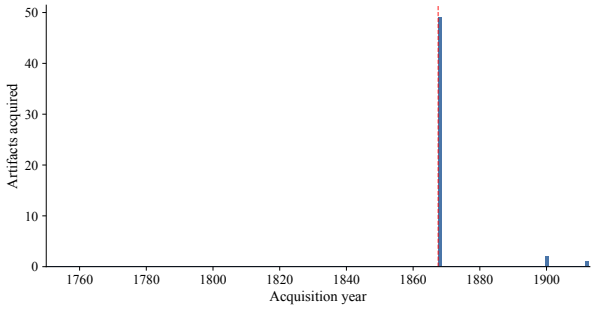
Note: Panel (a) shows a run of War Office promotion notices from the issue of 18 September 1860. Each notice names the regiment, the officer, the ranks before and after, the purchase channel, the predecessor whose vacancy is filled (the "vice" clause), and the effective date; the Roe–Gordon–Carleton sequence in the 60th Foot shows a complete by-purchase vacancy chain, in which each promotion opens the step below. Panel (b) shows the structured records the extraction returns, one per notice.

Figure A.6: Four Campaigns and Their Acquisition Channels

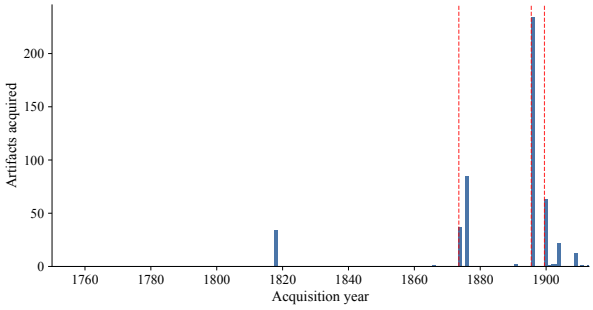
(a) Officer donations



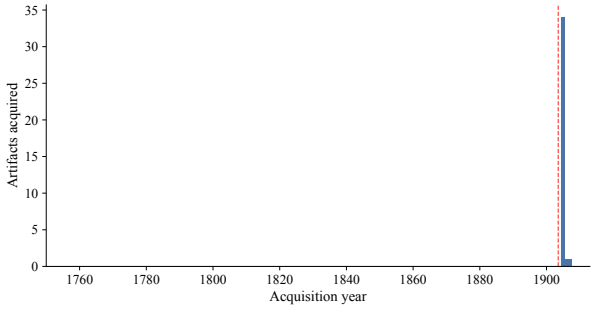
(b) Army sale at Magdala



(c) Auction and government transfer

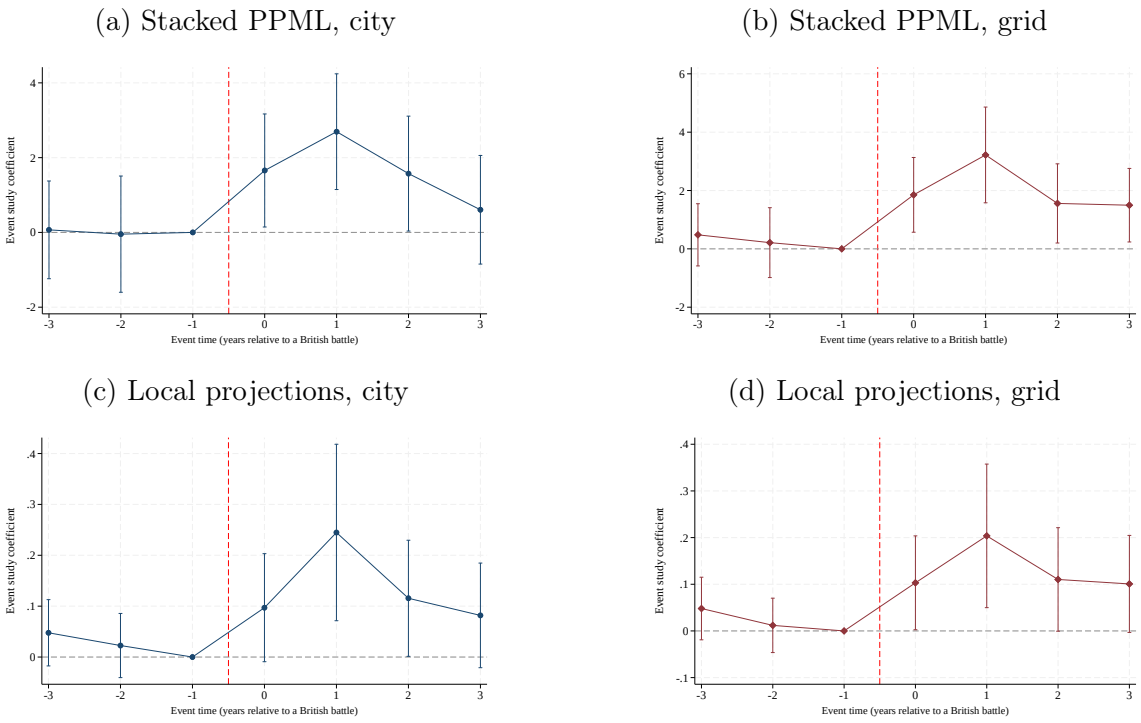


(d) Expedition acquisitions



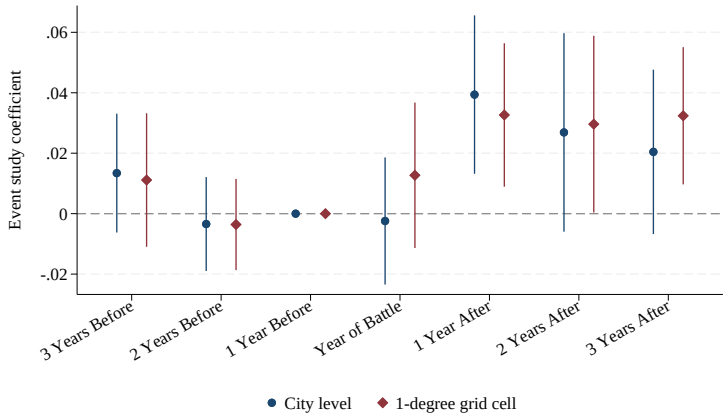
Note: Annual acquisitions, 1750-1913. A: Sevastopol/Kerch, including officer donations after 1855. B: Magdala matched to Dese, with the 1868 army sale. C: Kumasi, with the 1874 auction and 1896 government transfer. D: Gyantse, with the post-1904 inflow. Counts differ across panels. These selected cases illustrate channels rather than represent the average battle.

Figure A.7: Event Studies: Stacked and Local-Projection Designs



Note: Top row: stacked PPML with unit-by-stack and year-by-stack effects (Cengiz et al., 2019). Bottom row: local projections of inverse-hyperbolic-sine counts with recurring treatment (Dube et al., 2025). The city panel appears on the left and the grid panel on the right. Event time is years relative to battle, with year −1 omitted. Standard errors cluster by state/province for cities and by grid cell for grids. Error bars give 95% confidence intervals.

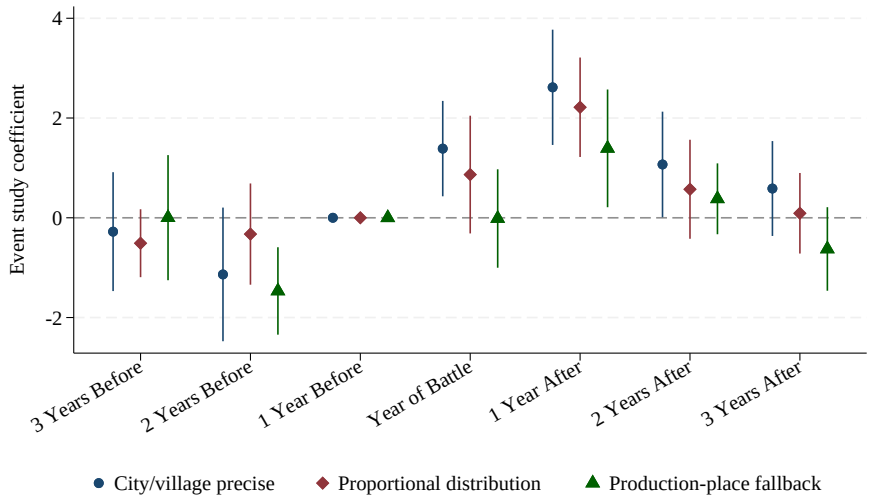
Figure A.8: Event Study: Extensive Margin



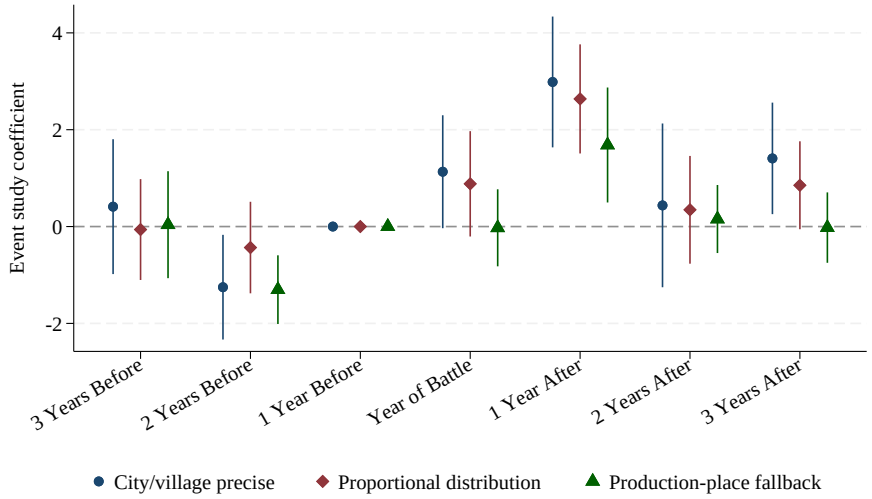
Note: ±3-year event study coefficients from the linear analog of equation (2), replacing the count with an any-acquisition indicator as in Table A.4, overlaying the city series (circles; standard errors clustered at the state/province) and the 1° grid series (diamonds; standard errors clustered at the grid cell). The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.9: Event Study: Alternative Artifact Geocoding

(a) City panel



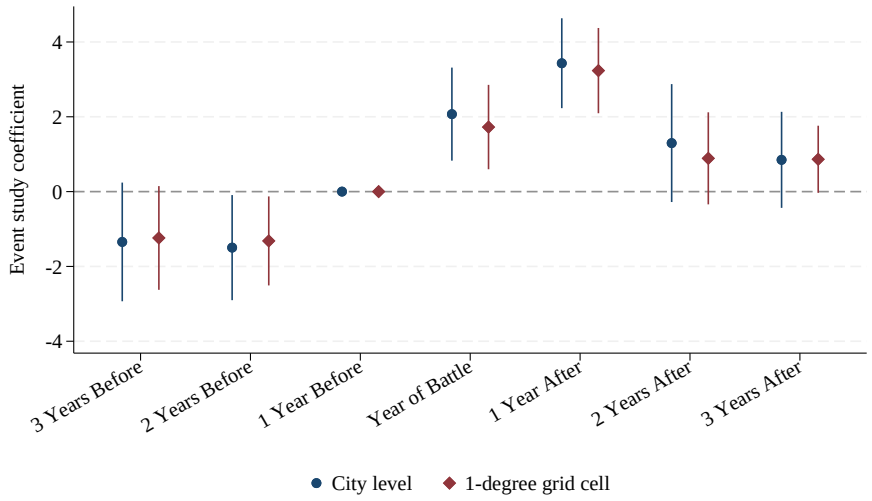
(b) 1° grid panel



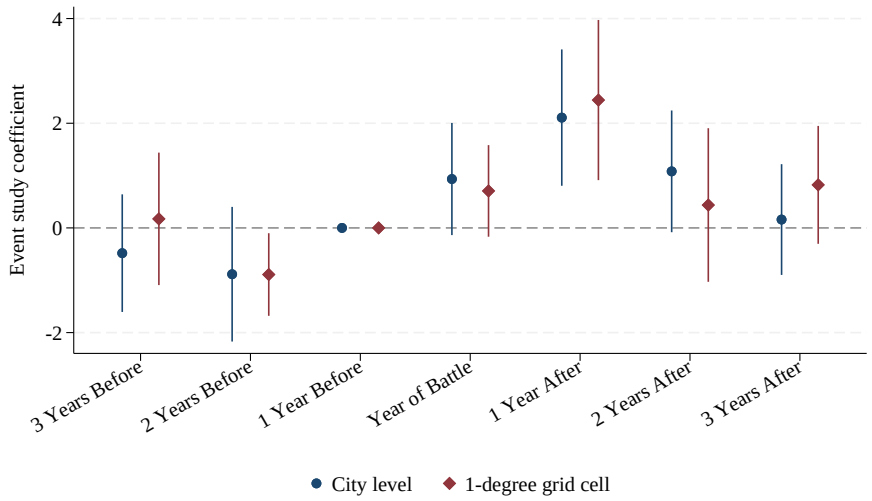
Note: ±3-year event study coefficients from equation (2) under the alternative outcome constructions of Table A.5: restricting the count to artifacts geolocated at city or village precision, spreading imprecisely located artifacts across the places of their country or state in proportion to precisely located inflows, and re-assigning artifacts without find spot to their production place as a fallback. Standard errors are clustered at the state/province (city) or the grid cell (grid). The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.10: Event Studies: Exhibited and Non-Donated Artifacts

(a) Ever-exhibited artifacts



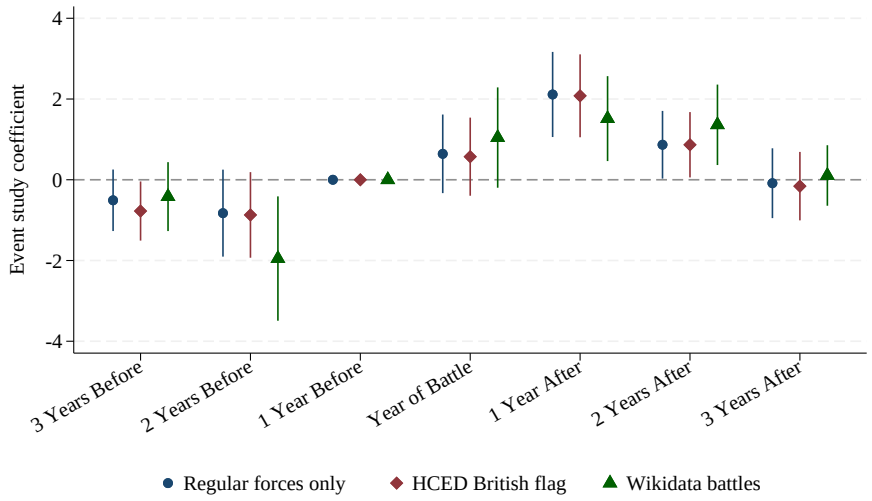
(b) Excluding personal donations



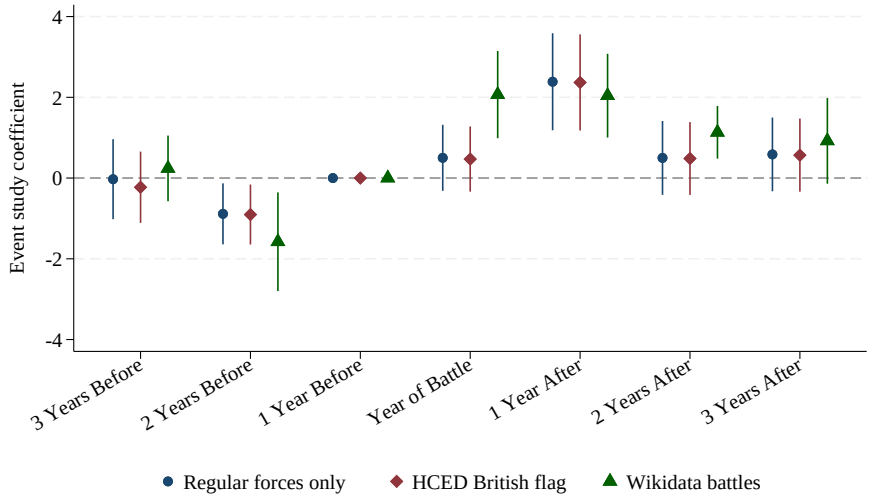
Note: ±3-year event study coefficients from equation (2) for the two alternative outcomes of Table A.6: in Panel A the count of acquired artifacts with any exhibition history, in Panel B the count excluding artifacts donated by private individuals. Each panel overlays the city series (circles; standard errors clustered at the state/province) and the 1° grid series (diamonds; standard errors clustered at the grid cell). The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.11: Event Study: Alternative British-Battle Definitions

(a) City panel

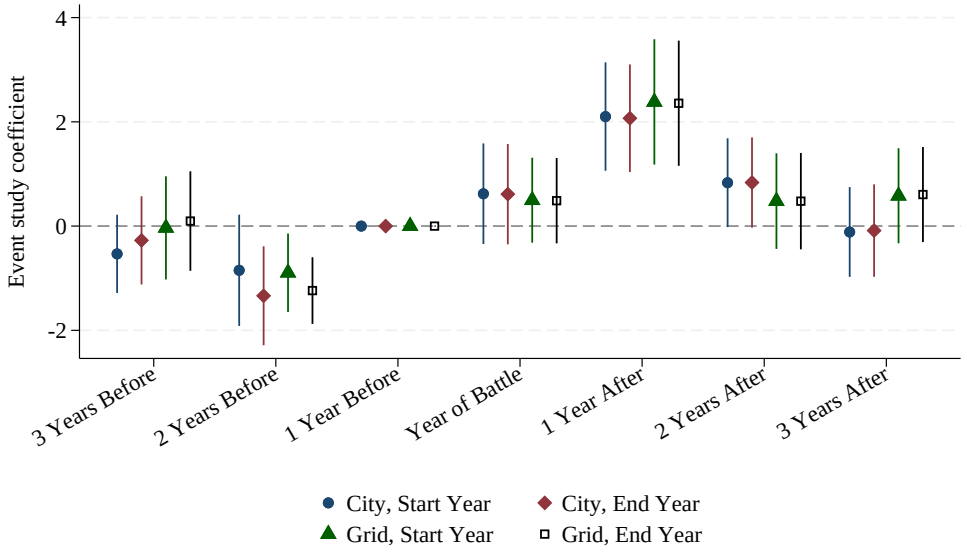


(b) 1° grid panel



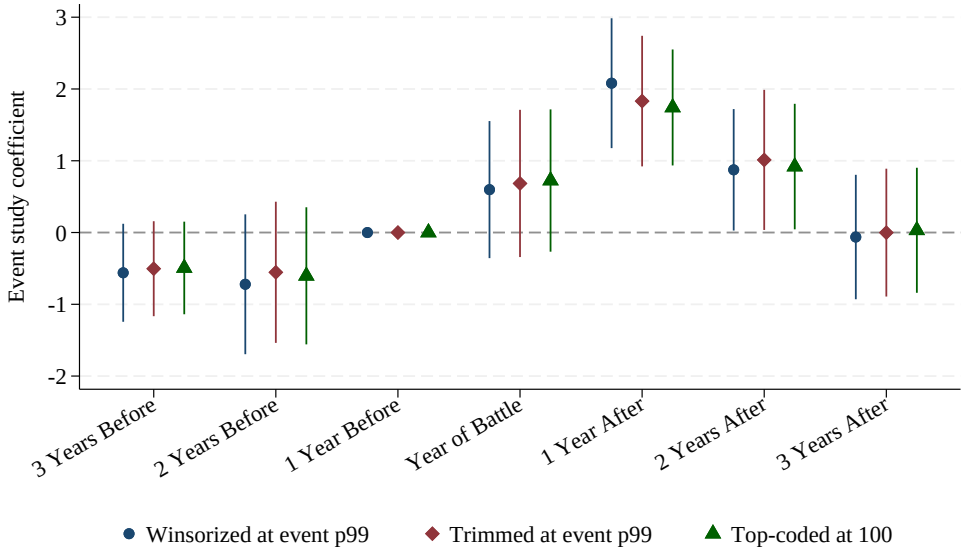
Note: ±3-year event study coefficients from equation (2) under the alternative British-battle definitions of Table A.7: the 439 engagements fought by the regular British Army, Royal Navy, or Royal Marines; the looser participant coding of Miller and Bakar (2023), labeled HCED in the legend; and the independently compiled Wikidata battle list. Standard errors are clustered at the state/province (city) or the grid cell (grid). The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.12: Event Study: Alternative Battle-Year Assignment



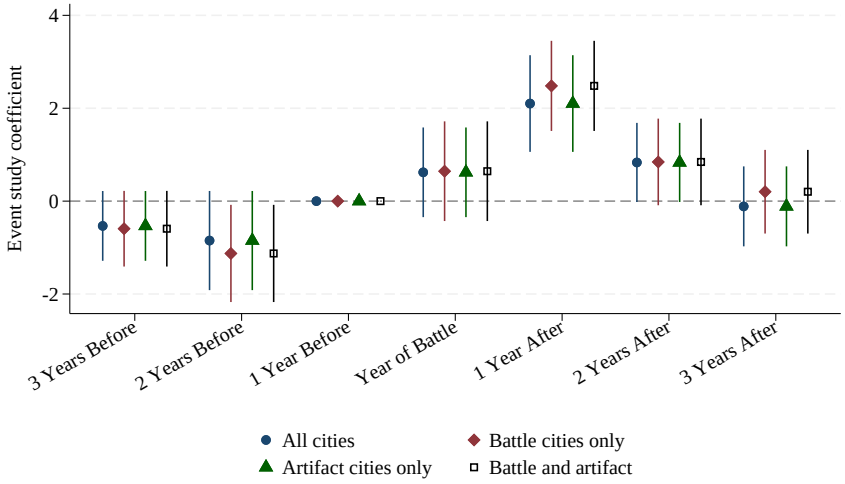
Note: ±3-year event study coefficients from equation (2) under the start-year (baseline) and end-year battle-year assignment rules, overlaying the city and grid series. The random-year variant appears in Table A.8. Standard errors are clustered at the state/province (city) or the grid cell (grid). The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.13: Event Study: Winsorized, Trimmed, and Top-Coded Outcomes



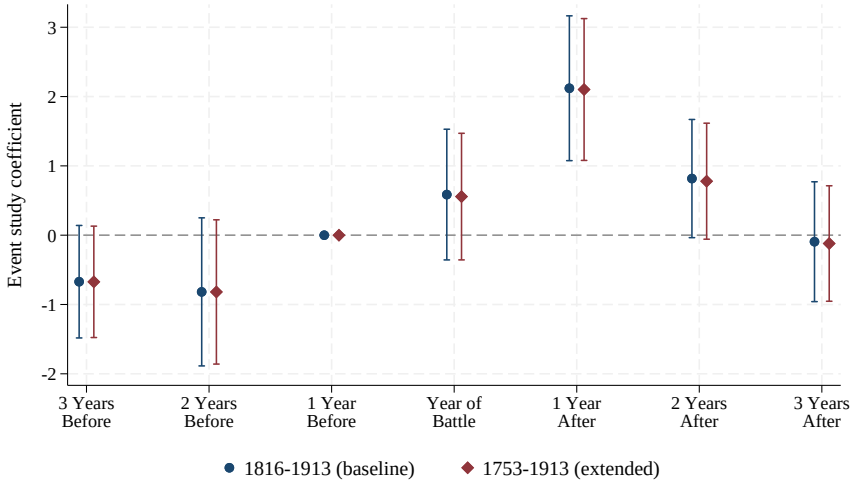
Note: ±3-year event study coefficients from equation (2) on the city panel under the outlier treatments of Table A.9: the outcome winsorized at the 99th percentile of positive city-year cells (225 artifacts), trimmed of the cells above that percentile, and top-coded at 100. Standard errors are clustered at the state/province. The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.14: Event Study: Alternative Sample Restrictions



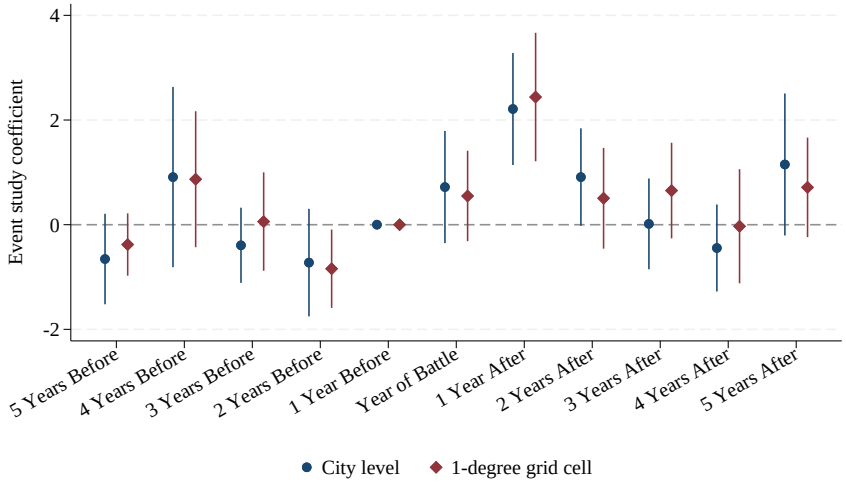
Note: ±3-year event study coefficients from equation (2) on the city panel under the alternative inclusion rules of Table A.10: all 7,342 listed cities, battle cities only, artifact cities only, and the battle-and-artifact intersection. Poisson estimation retains only units with a nonzero outcome in at least one year, so the all-cities and artifact-cities series coincide with the baseline, and the battle-cities and battle-and-artifact series coincide with each other. Standard errors are clustered at the state/province. The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.15: Event Study: Extending the Panel to 1753



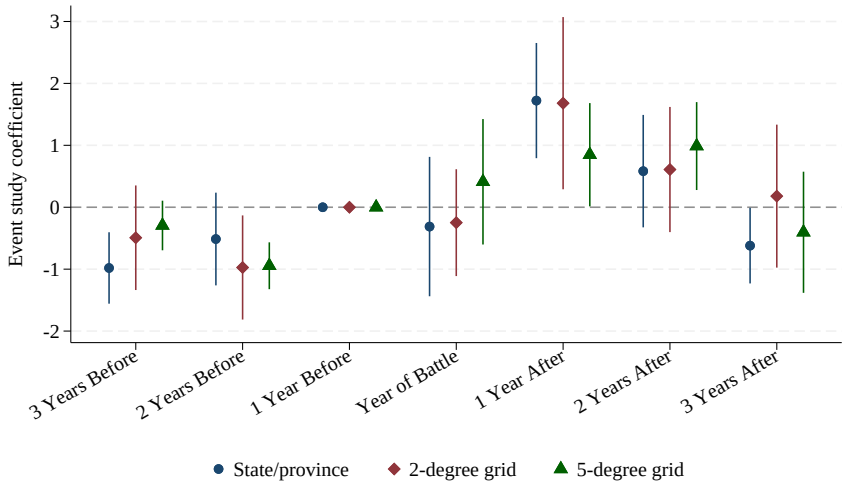
Note: ±3-year event study coefficients from equation (2) on the city panel, comparing the baseline 1816–1913 window with the panel extended back to the Museum's 1753 founding, as in Table A.10. Standard errors are clustered at the state/province. The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.16: Event Study: ±5-Year Window



Note: Event-study estimates from equation (2) extended to a ±5-year window, overlaying the city series (circles; PPML with city and year fixed effects, errors clustered at the state/province) and the 1° grid series (diamonds; PPML with grid-cell and year fixed effects, errors clustered at the grid cell). The reference period is $k = -1$. Error bars are 95% confidence intervals.

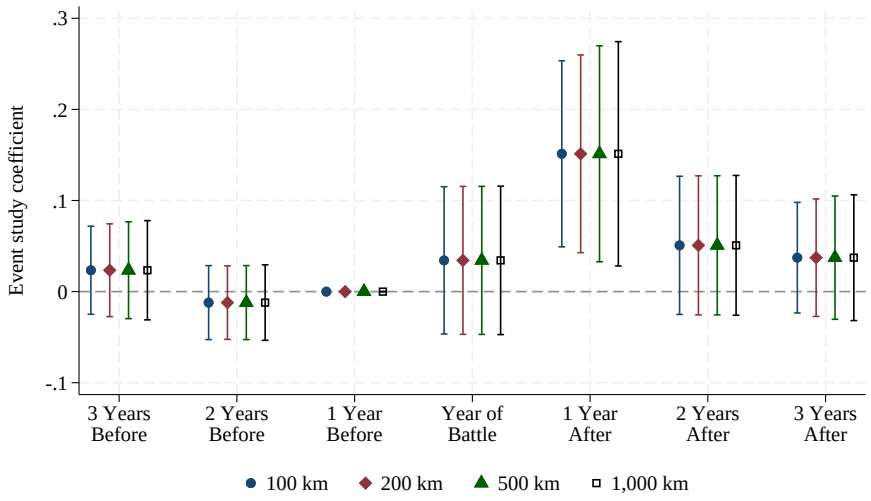
Figure A.17: Event Study: Coarser Spatial Aggregation



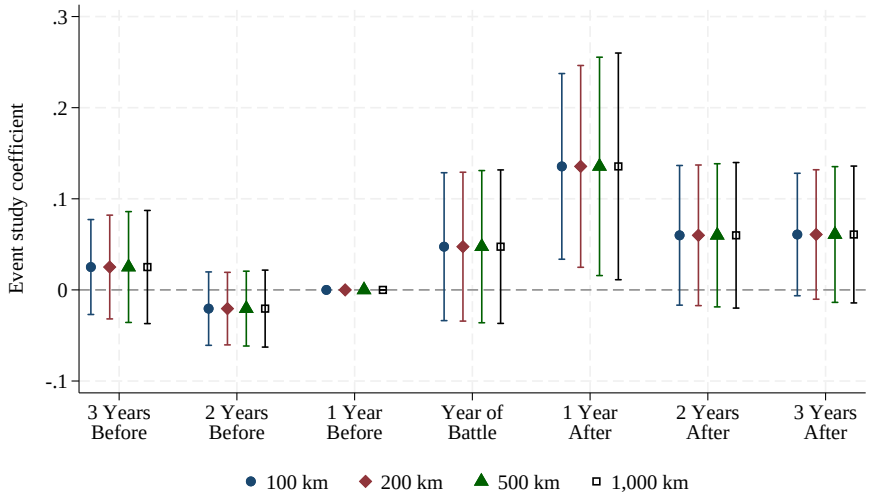
Note: ±3-year event study coefficients from equation (2) at the coarser aggregation levels of Table A.10: state/province units and 2° and 5° grid cells. Standard errors are clustered at the aggregation unit. The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.18: Event Study: Conley Spatial Standard Errors

(a) City panel

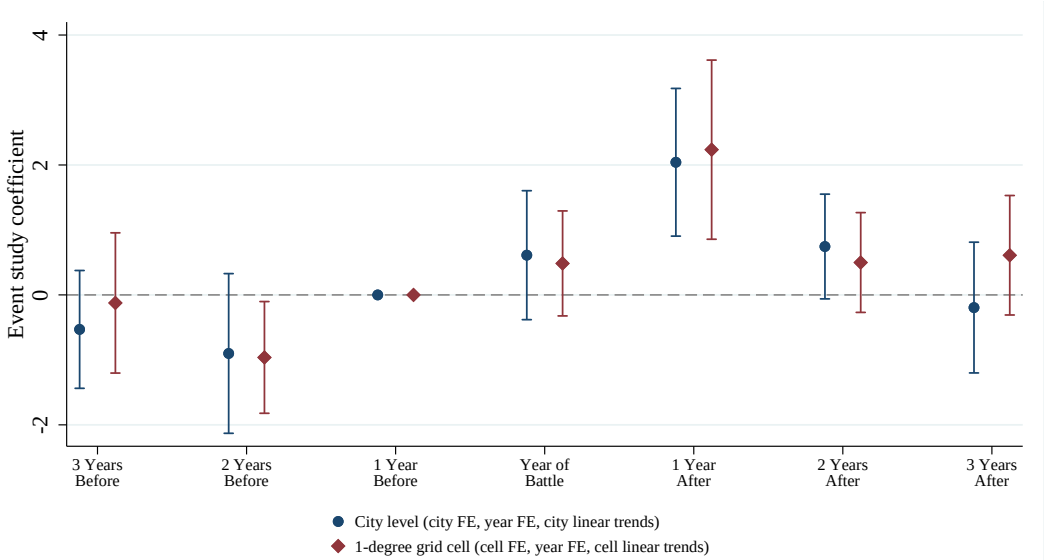


(b) 1° grid panel



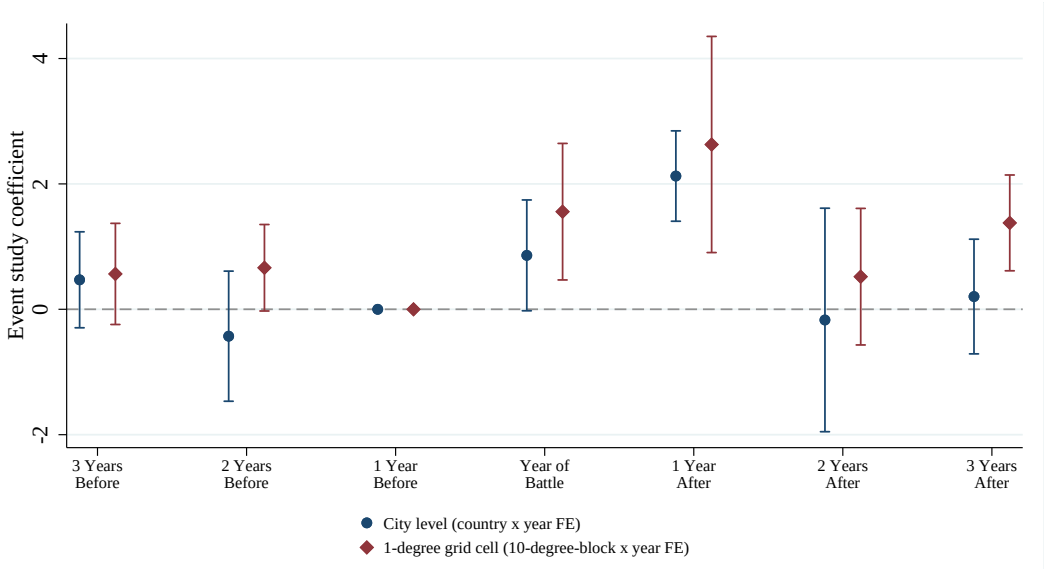
Note: ±3-year event study coefficients from the OLS analog of equation (2), as in Table A.10: OLS of the inverse hyperbolic sine transformation of the artifact count on the event-time indicators, with unit and year fixed effects and Conley (1999) standard errors at cutoffs of 100, 200, 500, and 1,000 km, allowing arbitrary serial correlation within units. Within each panel the point estimates are identical across the four series by construction; only the confidence intervals widen with the cutoff. The estimation sample is restricted to 1819–1910 so that every lead and lag is defined within the sample window. The reference period is $k = -1$. Error bars are 95% confidence intervals.

Figure A.19: Event Study with Unit-Specific Linear Trends



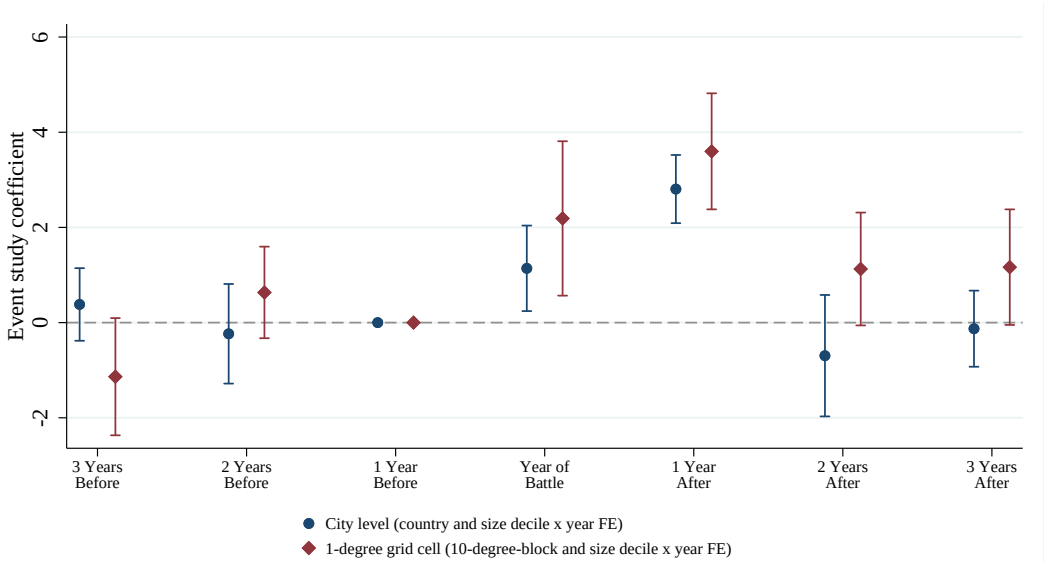
Note: The figure reports PPML event studies that add a separate linear time trend for every unit to the baseline specification of Figure 2. The city series (circles) includes city fixed effects, year fixed effects, and city-specific linear trends. The 1°-grid series (diamonds) includes grid-cell fixed effects, year fixed effects, and cell-specific linear trends. The reference period is $k = -1$. Error bars show 95% confidence intervals, with standard errors clustered by state/province for cities and by grid cell for grids.

Figure A.20: Event Study with Geographic-by-Year Fixed Effects



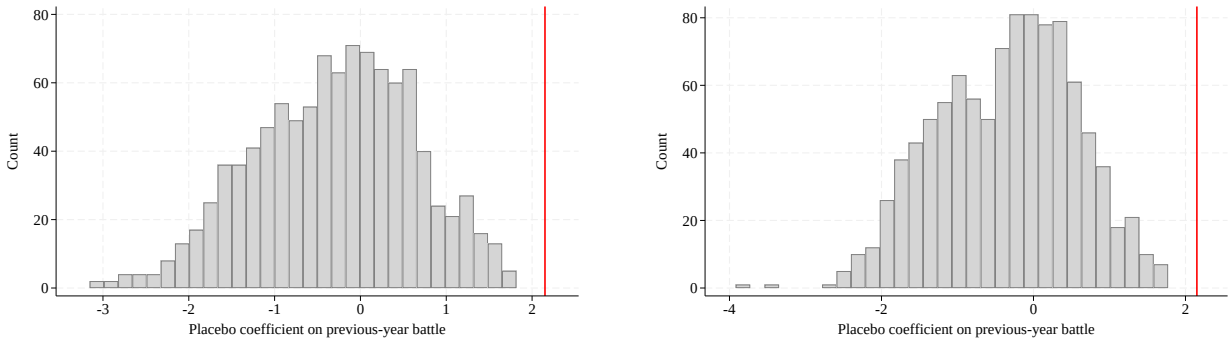
Note: The figure reports PPML event studies with the fixed effects from columns 2 and 5 of Table 2. The city series (circles) includes location and country-by-year fixed effects. The 1°-grid series (diamonds) includes grid-cell and 10°-block-by-year fixed effects. The reference period is $k = -1$. Error bars show 95% confidence intervals, with standard errors clustered by state/province for cities and by grid cell for grids.

Figure A.21: Event Study with Geographic and Size-by-Year Fixed Effects



Note: The figure reports PPML event studies with the fixed effects from columns 3 and 6 of Table 2. The city series (circles) includes location, country-by-year, population-decile-by-year, and area-decile-by-year fixed effects. The 1°-grid series (diamonds) includes grid-cell, 10°-block-by-year, cell-population-decile-by-year, and settlement-count-decile-by-year fixed effects. The reference period is $k = -1$. Error bars show 95% confidence intervals, with standard errors clustered by state/province for cities and by grid cell for grids.

Figure A.22: Placebo Simulations: Random Reassignment of British Battles

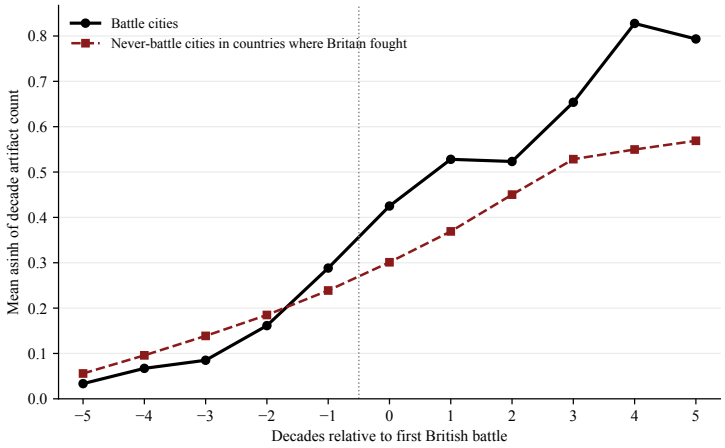


(a) Battle years shuffled

(b) Battle-city hosts shuffled

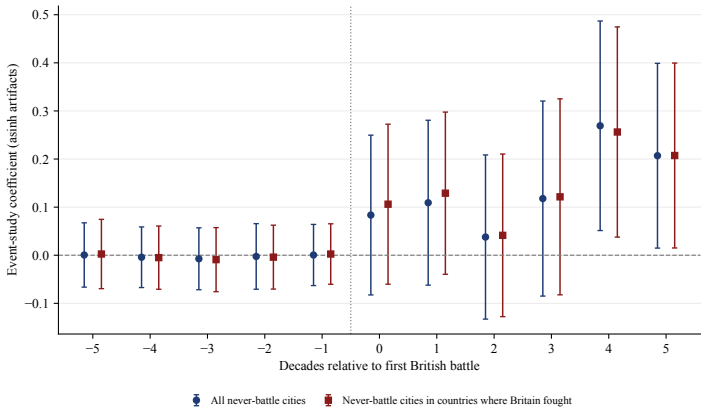
Note: Distribution of placebo coefficients across 1,000 independent random reassignments of the British-battle ledger on the city-year panel. Each British battle keeps its host city while its year is permuted within the multiset of years that actually contain a British battle in 1816–1913 (panel a), or keeps its year while its host is permuted within the multiset of cities that actually host a British battle (panel b). The placebo coefficients average −0.30 with a standard deviation of 0.93 when years are shuffled and −0.36 with a standard deviation of 0.91 when hosts are shuffled. Each bar counts draws with the indicated coefficient value. The solid red vertical line marks the baseline coefficient of 2.150 (Table 3, column 1), estimated on the actual battle assignment. The baseline exceeds all 1,000 placebo draws in both panels.

Figure A.23: Battle Cities and Cities with No British Battle around the First British Battle



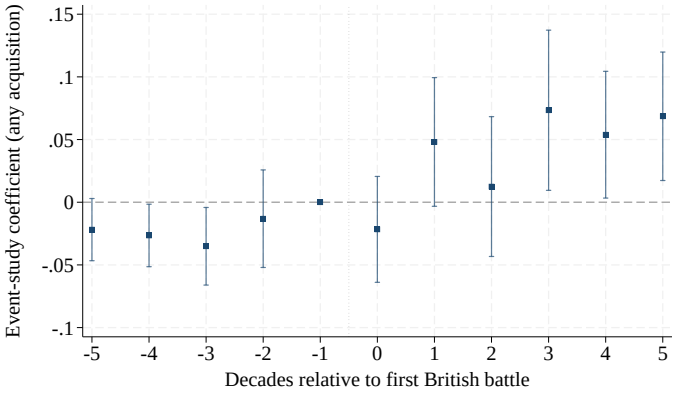
Note: The unit of observation is a city-decade on the 1750–2024 panel of Section 4.5. The outcome is the inverse hyperbolic sine transformation of the decade artifact count, the outcome of equation (3). The solid line is the mean outcome of the 216 cities with a British battle during 1816–1913 in the five decades before and after the decade of their first battle. The dashed line is the mean outcome, in the same calendar decades, of the 1,181 cities with a British Museum acquisition and no British battle in the countries where Britain fought, averaged over battle cities with equal weight. The dotted vertical line separates the pre-battle decades from the battle decade.

Figure A.24: Long-Run Artifact Acquisitions after a City's First British Battle: Synthetic Difference-in-Differences under Two Donor Pools



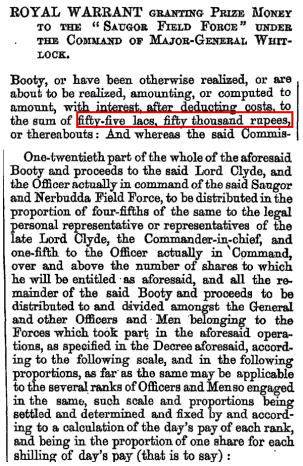
Note: Synthetic difference-in-differences estimates (Arkhangelsky et al., 2021) for the decade-level design of Section 4.5. The outcome is the inverse hyperbolic sine transformation of the decade-level count of British Museum artifacts from each city, on the 1750–2024 panel of cities with a British battle or a Museum acquisition. Each city's clock is anchored at the decade of its *first* British battle during 1816–1913, and $h = 0$ is the decade containing the first battle. I estimate the profile separately for each first-battle cohort and average across cohorts by the number of battle cities, 216 in all. The two series differ only in the donor pool: all 2,883 cities with no British battle, and the 1,181 of them in the countries where Britain fought during 1816–1913. The pre-battle coefficients are close to zero by construction, because the donor and decade weights are chosen to match the pre-battle path. Error bars show 95% confidence intervals from a delete-one jackknife over state/province clusters that holds the fitted weights fixed.

Figure A.25: Any Acquisition in the Decades after a City's First British Battle



Note: Staggered event study of equation (3) with the outcome replaced by an indicator equal to one if the British Museum acquired at least one artifact from the city in the decade, estimated with the interaction-weighted estimator of Sun and Abraham (2021) on the 1750–2024 panel of Section 4.5. Each city's clock is anchored at the decade of its *first* British battle during 1816–1913, decade −1 is omitted, and cities with no British battle are the control cohort. Coefficients are in percentage points of the probability of any acquisition; cities with no British battle acquire at least one artifact in about one decade in five over the same calendar decades. City and decade fixed effects are included, and standard errors are clustered at the state/province level. Error bars show 95% confidence intervals.

Figure A.26: A Royal Warrant Granting Prize Money in the *London Gazette*: Banda and Kirwee, 1867



ROYAL WARRANT granting Prize Money to the "Saugor Field Force" under the Command of Major-General Whitlock.

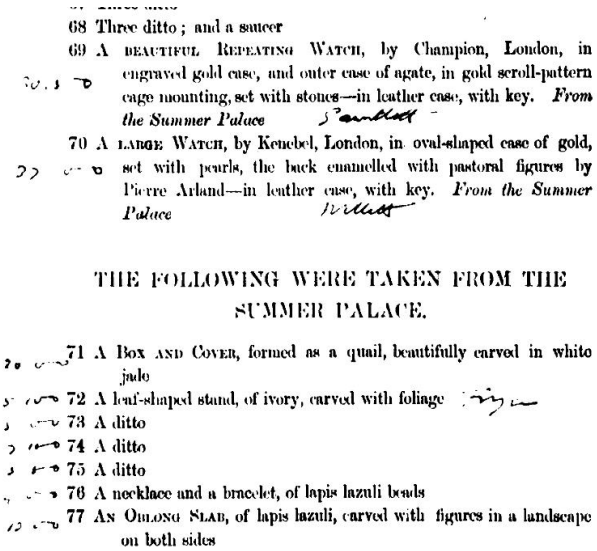
Booty, or have been otherwise realized, or are about to be realized, amounting, or computed to amount, with interest, after deducting costs, to the sum of fifty-five lacs, fifty thousand rupees, or thereabouts: And whereas the said Commis-

One-twentieth part of the whole of the aforesaid Booty and proceeds to the said Lord Clyde, and the Officer actually in command of the said Saugor and Nerbudda Field Force, to be distributed in the proportion of four-fifths of the same to the legal personal representative or representatives of the late Lord Clyde, the Commander-in-chief, and one-fifth to the Officer actually in Command, over and above the number of shares to which he will be entitled as aforesaid, and all the remainder of the said Booty and proceeds to be distributed to and divided amongst the General and other Officers and Men belonging to the Forces which took part in the aforesaid operations, as specified in the Decree aforesaid, according to the following scale, and in the following proportions, as far as the same may be applicable to the several ranks of Officers and Men so engaged in the same, such scale and proportions being settled and determined and fixed by and according to a calculation of the day's pay of each rank, and being in the proportion of one share for each shilling of day's pay (that is to say):

Note: The Royal Warrant of 5 February 1867 granting the booty of Banda and Kirwee to the Saugor Field Force (no. 23216, pp. 635–636), reproduced from the digitized *London Gazette* (thegazette.co.uk) with the sum boxed in red: the title, the sentence stating the sum realized after costs, 55,50,000 rupees or £555,000, about £87 million at 2025 prices, and the clause reserving one twentieth, about £4.4 million at 2025 prices, to Lord Clyde's representatives and to General Whitlock in the proportion of four fifths to one fifth, with the remainder divided by rank at one share for each shilling of daily pay. Contemporary accounts trace the booty to the looting of the Nawab of Banda's palace and of the vaults of the Rao of Kirwee's palace, which held specie, jewels, and diamonds (Kaye and Malleson, 1889, vol. 5, pp. 137, 141). The first distribution paid fifty pounds to each private's share. Rupees are converted at ten to the pound and nominal sums to 2025 prices with the Retail Prices Index (Appendix B.6).

Figure A.27: Auction Sale Catalogues: Annotated Pages

(a) Christie's, 14 July 1864



68 Three ditto; and a saucer

69 A BEAUTIFUL REPEATING WATCH, by Champion, London, in engraved gold case, and outer case of agate, in gold scroll-pattern cage mounting, set with stones—in leather case, with key. *From the Summer Palace*

70 A LARGE WATCH, by Kenebel, London, in oval-shaped case of gold, set with pearls, the back enamelled with pastoral figures by Pierre Arland—in leather case, with key. *From the Summer Palace*

THE FOLLOWING WERE TAKEN FROM THE SUMMER PALACE.

71 A BOX AND COVER, formed as a quail, beautifully carved in white jade

72 A leaf-shaped stand, of ivory, carved with foliage

73 A ditto

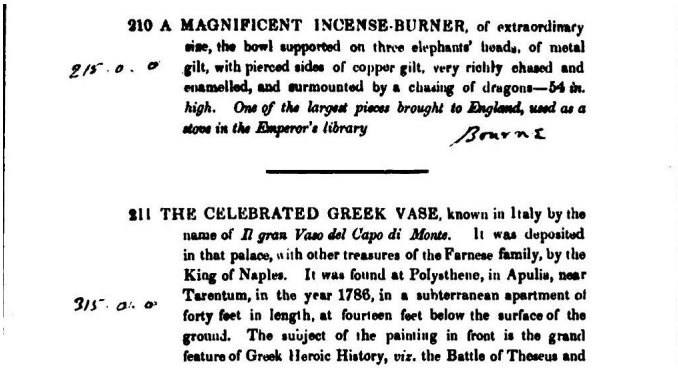
74 A ditto

75 A ditto

76 A necklace and a bracelet, of lapis lazuli beads

77 AN OBLONG SLAB, of lapis lazuli, carved with figures in a landscape on both sides

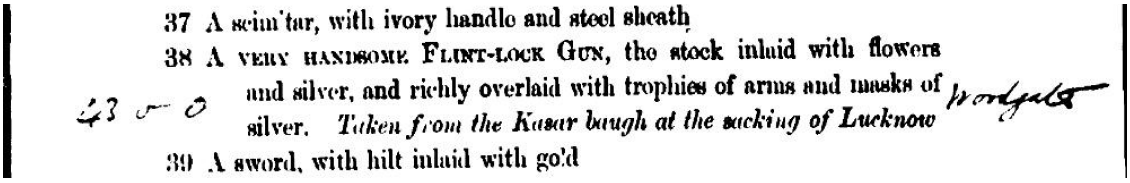
(b) Christie's, 11 June 1863



210 A MAGNIFICENT INCENSE-BURNER, of extraordinary size, the bowl supported on three elephants' heads, of metal gilt, with pierced sides of copper gilt, very richly chased and enamelled, and surmounted by a chasing of dragons—54 in. high. *One of the largest pieces brought to England, used as a stove in the Emperor's library*

211 THE CELEBRATED GREEK VASE, known in Italy by the name of *Il gran Vaso del Capo di Monte*. It was deposited in that palace, with other treasures of the Farnese family, by the King of Naples. It was found at Polysthene, in Apulia, near Tarentum, in the year 1786, in a subterranean apartment of forty feet in length, at fourteen feet below the surface of the ground. The subject of the painting in front is the grand feature of Greek Heroic History, *viz.* the Battle of Theseus and

(c) Christie's, 16 February 1865



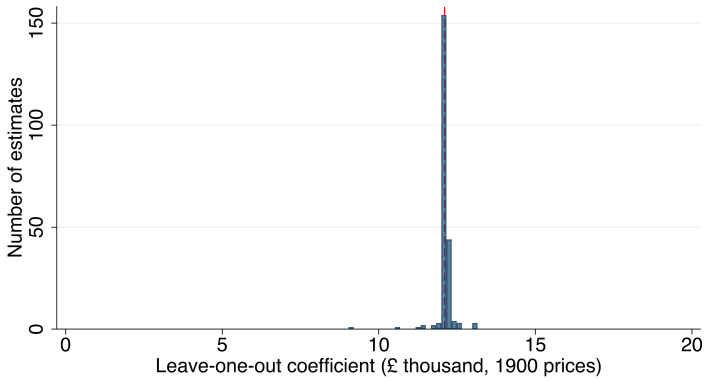
37 A scim'tar, with ivory handle and steel sheath

38 A VERY HANDSOME FLINT-LOCK GUN, the stock inlaid with flowers and silver, and richly overlaid with trophies of arms and masks of silver. *Taken from the Kasar baugh at the sacking of Lucknow*

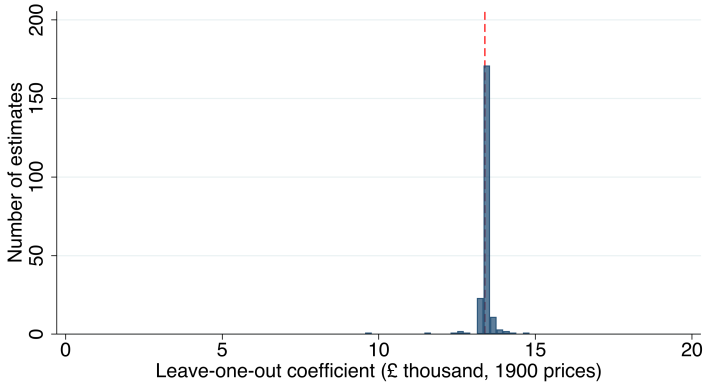
39 A sword, with hilt inlaid with gold

Note: Parts of three catalogue pages reproduced from the scanned copies in *Art Sales Catalogues Online*, each showing the printed statement of a taking and the contemporary hand recording the hammer price in the left margin and the buyer's name after the entry. Panel (a), from the sale of 14 July 1864 (Lugt 28039), shows the section heading "The following were taken from the Summer Palace" over lots 71 to 77, and above it lots 69 and 70, two watches "From the Summer Palace," bought by Sambell and Willett. Panel (b), from the sale of 11 June 1863 (Lugt 27400), shows lot 210, an incense-burner "used as a stove in the Emperor's library," in the section headed "Enamels from the Summer Palace" that opens on the previous page, sold for £215 to Bourne. Panel (c), from the sale of 16 February 1865 (Lugt 28279), shows lot 38, a flint-lock gun "Taken from the Kasar baugh at the sacking of Lucknow," sold for £43 to Woodgate. The vision-language model reads each page into one row per printed lot, and readers then check the margins on the page images (Appendix B.10).

Figure A.28: Leave-One-Out Distribution of the Probate Wealth Estimate



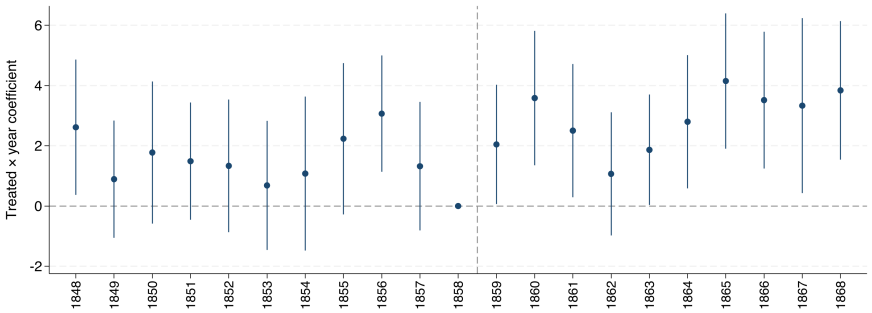
(a) No controls



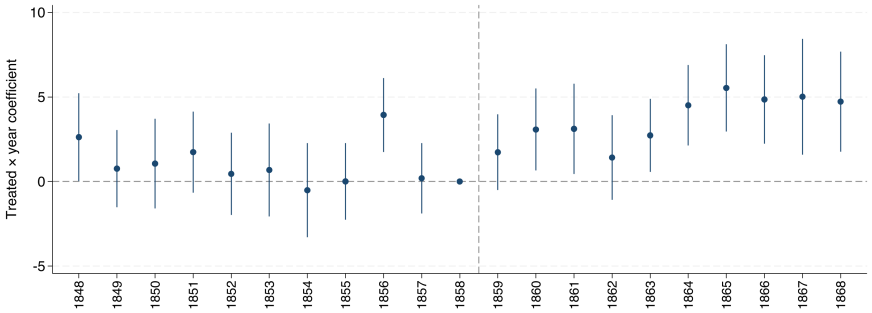
(b) Background and rank controls

Note: Histograms of the 218 leave-one-out coefficients from re-estimating the strict 2×-pre, 20-year specification of Table 7, Panel B, dropping each matched commander in turn, without controls in panel (a) and with the full pre-treatment background and rank controls of that table in panel (b). The dashed red line marks the full-sample estimate (12.103 without controls, 13.390 with). Every leave-one-out estimate lies within one standard error of the full-sample estimate, and in both specifications 214 of the 218 estimates remain significant at the 1% level and all 218 at the 5% level. Standard errors are heteroskedasticity-robust.

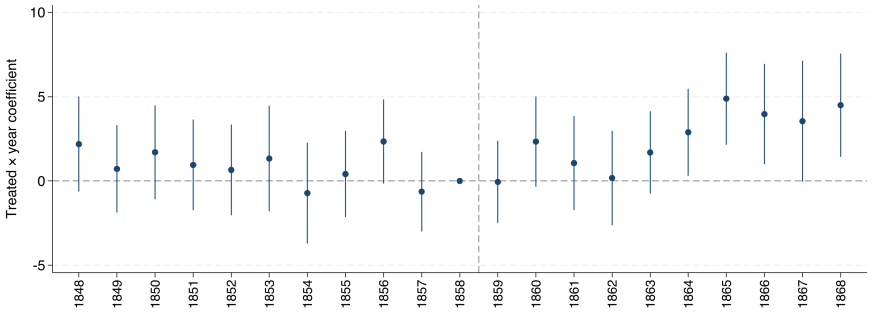
Figure A.29: Indian Mutiny Event Study: Alternative Comparison Sets



(a) All Mutiny regiments vs. regiments that fought elsewhere



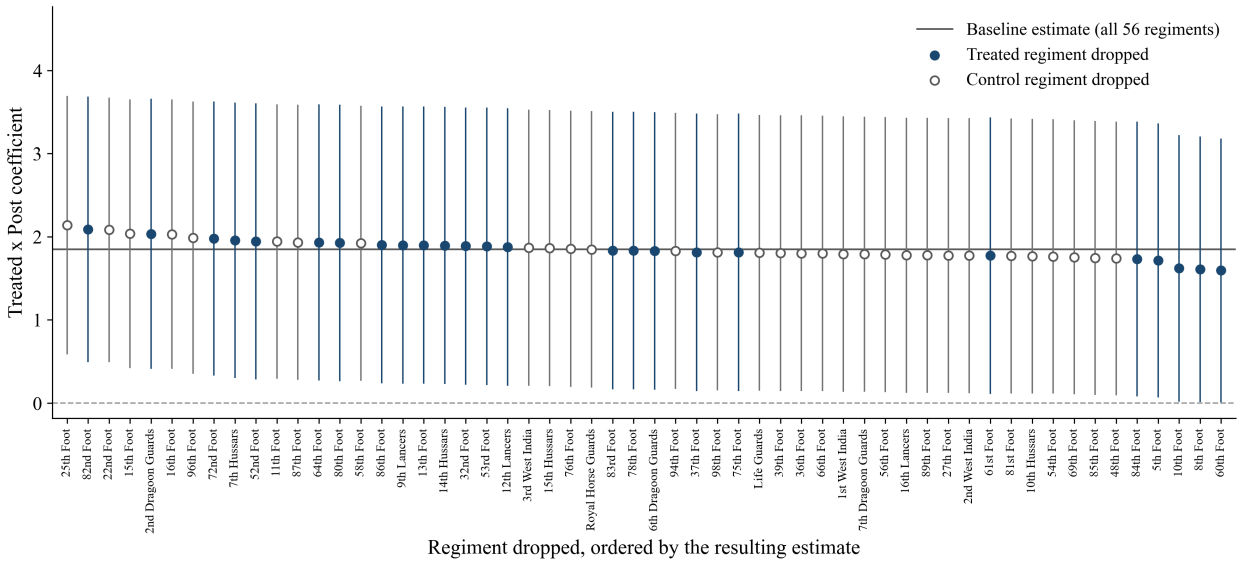
(b) Mutiny-only regiments vs. regiments that fought elsewhere



(c) Mutiny-only regiments vs. regiments untouched by the Crimean and Beijing campaigns

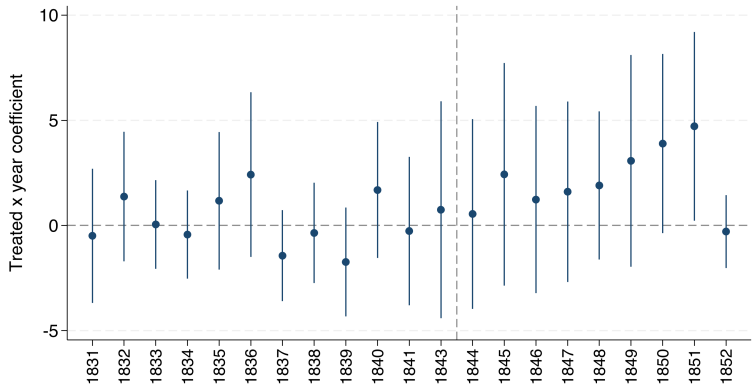
Note: Event studies of all commission-purchase events under alternative comparison sets (Appendix B.19 details the classifications). Panel (a) compares all 38 regiments with substantial Mutiny service against the 63 other purchasable regiments credited with a battle anywhere over 1848–1870; panel (b) restricts the treated side to the 25 regiments whose principal campaign was the Mutiny, against the same comparison group; panel (c) compares the same 25 regiments with the 44 purchasable regiments with no exposure to the Crimean War or the 1860 Beijing campaign, whether or not they fought elsewhere. Under the classification of Section 5.1, those were the period's two other artifact-heavy campaigns. The British Museum acquired over 300 artifacts from Kerch within three years of its 1855 sack and 139 from Sevastopol, and the Beijing campaign's inflow of 178 artifacts arrived over the following two decades, so regiments exposed to either received a spoils shock of their own. The period's remaining campaigns generated no comparable inflow. Specification, the omitted 1858 base year, and confidence intervals are those of Figure 5.

Figure A.30: Indian Mutiny Difference-in-Differences: Leave-One-Regiment-Out Estimates



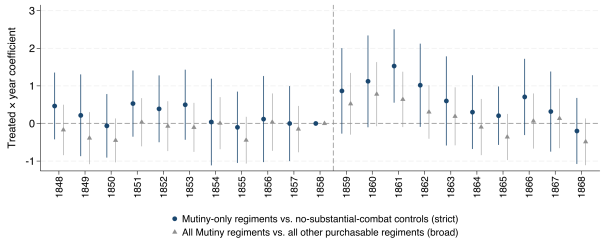
Note: Each marker is the difference-in-differences estimate of the strict design of Section 5.2 (all commission-purchase events per regiment-year, 1848–1868, post period 1859–68, regiment and year fixed effects) re-estimated with one of the 56 sample regiments dropped, ordered from the largest to the smallest estimate. Filled markers drop one of the 25 treated regiments and hollow markers one of the 31 controls. Vertical lines are 95% confidence intervals with standard errors clustered by regiment, and the horizontal line is the baseline estimate on all 56 regiments.

Figure A.31: Commission Purchases after the First Afghan War: Event Study

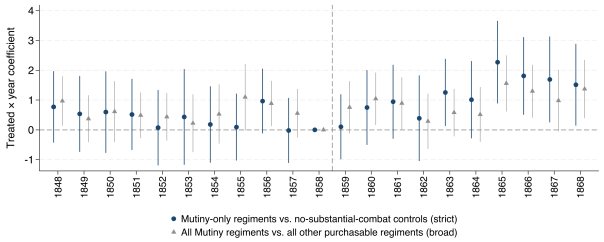


Note: Event study of all commission-purchase events (by-purchase promotions plus purchased first commissions) at the regiment-year level, estimated with the design of Section 5.2 on the audited groups of Appendix B.20. The figure compares the five purchasable regiments with substantial First Afghan War service against the 67 purchasable regiments that fought nothing between 1831 and 1852; the omitted base year is 1842, the war's final year, and the campaign years sit in the pre-period. The specification includes regiment and year fixed effects, and 95% confidence intervals use standard errors clustered by regiment.

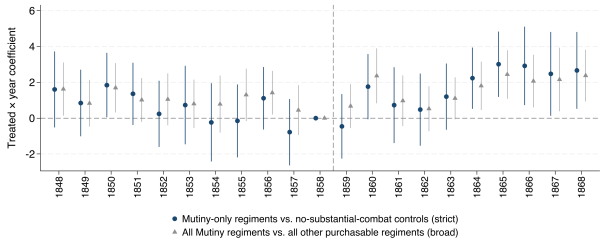
Figure A.32: Indian Mutiny Event Studies by Channel



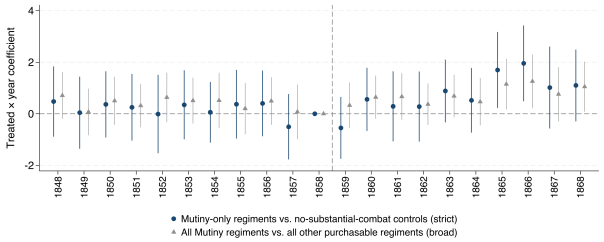
(a) Exchanges into the regiment



(b) First commissions purchased



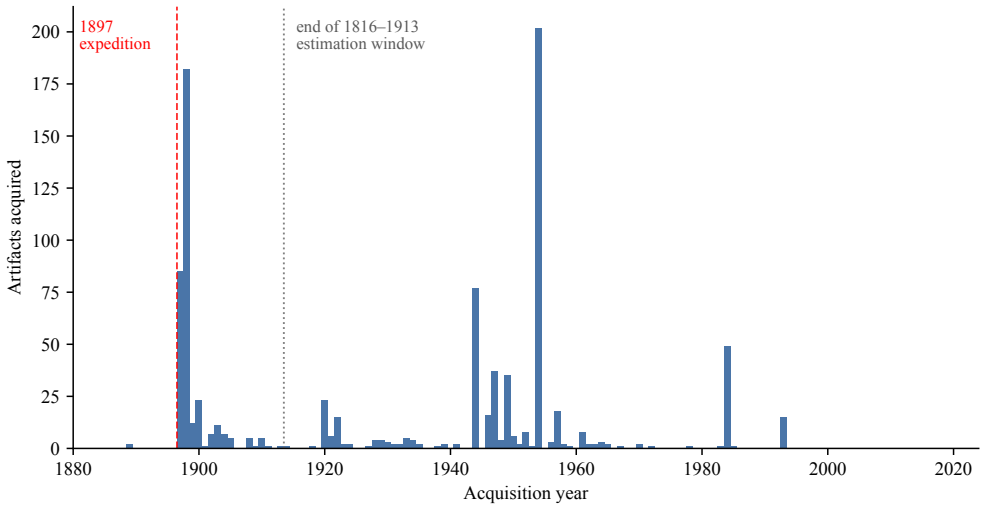
(c) Within-regiment promotions by purchase



(d) Retirements and resignations

Note: Event studies of the officer-career events in columns 2 to 5 of Table A.31, one per channel. Panel (a) counts officers arriving by exchange from another regiment and panel (b) civilians buying a first commission, the two entry routes for outsiders. Panel (c) counts by-purchase promotions filled from inside the regiment's own ladder rather than by an officer arriving from another corps or from half-pay, the purchases an incumbent with prize money in hand would make. Panel (d) counts retirements and resignations, the departures that opened vacancies. Each panel overlays the two specifications of Figure 5, with identical marker coding: circles for the 25 Mutiny-only regiments against the 31 controls with no substantial combat in the period (strict), triangles for all 38 substantial-Mutiny regiments against all other purchasable regiments (broad). The omitted 1858 base year is that of Figure 5, and 95% confidence intervals are reported with standard errors clustered by regiment.

Figure A.33: Benin City (Nigeria): British Museum Artifact Acquisitions Extended to 2024



Note: Annual count of British Museum artifacts from Benin City, Nigeria, 1880–2024. The red dashed line marks the 1897 British Punitive Expedition; the grey dotted line marks the end of the 1816–1913 estimation window. Of the 930 Benin City artifacts in the 1750–2024 catalog, 348 were acquired inside the estimation window and 582 afterwards, the latter arriving in a small number of discrete institutional transfers rather than a continuing inflow, most conspicuously the 202 artifacts from the Wellcome Museum dispersal of 1954. No Benin City artifact has been acquired since 1993.

Table A.1: Prize Funds, 1816–1913

Fund (campaign, years)	Record	Fund total (£, nominal)	Property sold	Commander's share (£, nominal)	In sample
Deccan booty (Maratha War, 1817–18)	notices 1826–50, shares	850,000[a]	cash and treasure	eighth, about 100,000	1
Ras al-Khaimah (Persian Gulf, 1819–20)	booty; notices 1828	—	booty and treasure	captain's class 458	0
Ava (First Burma War, 1824–26)	notices 1840–45	—	unknown	—	1
Bhurtpore (Siege of Bharatpur, 1826)	Warrant 1826; notices 1830	480,000[a]	treasure in the fort	Combermere 60,000	1
Coorg (Coorg campaign, 1834)	notice 1837, Chelsea	—	unknown	—	0
Ghuznee (Capture of Ghazni, 1839)	notices 1849–50 (LG 21038)	—	unknown	—	0
Kelat and Nepanee (Kalat, 1839–41)	notices 1848, Chelsea	—	unknown	—	1
Syria and Acre (Egyptian War, 1840)	gratuity; notices 1844	—	none, a gratuity	Stopford 2,412	0
Jellalabad (Defence of Jalalabad, 1842)	Warrant 1842, India	—	unknown	—	1
China batta (First Opium War, 1841–42)	notices 1844–45, EIC	—	none, a gratuity	—	6
Scinde (Conquest of Sind, 1843)	notices 1849–52 (LG 21125)	540,000[b]	the Amirs' treasure	Napier 68,000	1
Sutlej (First Sikh War, 1845–46)	Warrant 1845, India	—	unknown	—	2
Punjab (Second Sikh War, 1848–49)	Warrant 1851, Calcutta Gazette	130,992[d]	jewels, other property, ordnance	—	2
Pegu (Second Burma War, 1852–53)	Chelsea rolls, 1861–64	—	unknown	—	2
Kertch (Crimean War, 1855)	grant; notices 1864	85,925[c]	stores, valued	each flag officer 2,969	1
Persia (Anglo-Persian War, 1856–57)	India Office prize rolls	—	unknown	—	1
Canton (Second Opium War, 1857–58)	Treasury award 1860	50,544[c]	value awarded	—	3
Delhi (Indian Mutiny, 1857)	Warrant 1861, LG 22478	346,121	jewels, coin, shawls, arms	17,306, four commanders	1
Lucknow (Indian Mutiny, 1857–58)	Warrant 1861, LG 22478	148,265	gold, jewels, shawls, dresses	Clyde 7,413	3
Dhar (Indian Mutiny, 1857)	Warrant 1862, LG 22675	77,101	coin, cannon, elephants	—	2
Hulgullee (Indian Mutiny, 1857)	Warrant 1862, LG 22675	490	cattle	—	0
Sarun (Indian Mutiny, 1858)	Warrant 1862, LG 22675	4,960	cash, grain, elephants, cattle	—	0
Shorapore (Indian Mutiny, 1858)	Warrant 1862, LG 22675	6,831	arms, animals, jewels	—	0
Nurgoond (Indian Mutiny, 1858)	Warrant 1862, LG 22675	1,003	livestock and grain	—	0
Khandeish (Indian Mutiny, 1858)	Warrant 1862, LG 22675	11,709	silver, coin, ornaments	—	0
Banda and Kirwee (Indian Mutiny, 1858)	Warrant 1867, LG 23216	555,000	specie, jewels, diamonds	Clyde 22,200; Whitlock 5,550	1
Jhansi (Indian Mutiny, 1858)	Warrant 1867, LG 23216	52,212	property sold	twentieth to Clyde and Rose	3
Kotah (Indian Mutiny, 1858)	Warrant 1867, LG 23216	12,498	property sold	—	1
Pekin (Second Opium War, 1860)	field auction, not gazetted	26,000[a]	palace loot and treasure	generals waived their shares	1
Abyssinia (Magdala expedition, 1868)	gazetted 1872	2,000	loot; crown and chalice	—	1
Kumasi (Third Ashanti War, 1873–74)	prize sales, not gazetted	11,000[c]	gold regalia	—	0
Mandalay (Third Burma War, 1885)	spot auction, not gazetted	—	palace contents	—	1
Peking (Boxer Rebellion, 1900)	auctions; LG 27492 (1902)	—	loot auctions	—	2
Total, 20 funds with a figure, nominal		3,392,651			
in 1900 pounds		3,063,783			
at 2025 prices		529,035,370			

Note: Every prize fund documented for 1816–1913, army and navy, one row per fund in campaign order. *Record* gives the years of the fund's *London Gazette* notices with a representative issue number, or the channel where the distribution was not gazetted in London (Appendix B.8); the Lucknow, Sarun, Pegu, and Abyssinia funds also paid their naval brigades. *Fund total* is the sum the warrant or notice states, rupees at ten to the pound, except *a*, from the literature: the Deccan army's booty as the returns cited in the Commons put it (Parliamentary Papers, 1832), Bhurtpore from Biddulph (1933, p. 230), and Pekin from Hevia (2003, p. 85); *b*, implied from Napier's eighth of £68,000 (Appendix A.2); *c*, a grant to army and navy (Kertch), the Treasury's award to the naval force alone (Canton), or the sale proceeds (Kumasi); and *d*, the whole booty the warrant states (Punjab), of which the East India Company kept half towards the war's expenses. *Commander's share* is the sum the warrant reserves (one twentieth of the Mutiny funds to the commander-in-chief and the officer commanding, and at Delhi divided among four commanders by days in command), the notice prints, or the literature records: the Deccan eighth contested between Hastings and Hislop (Parliamentary Papers, 1832), Combermere's and Napier's receipts (Biddulph, 1933, p. 230; Court of Queen's Bench, 1852), and the generals' waiver at Pekin (Hevia, 2003, p. 85). *Property sold* summarizes what the warrant, notice, or literature says the fund was realized from, and 'unknown' means the notice names only the campaign. *In sample* counts the commanders of the 218-person probate sample who led a battle the fund covered. The total rows convert each figure from its year of payment with the Retail Prices Index (Appendix B.6).

Table A.2: Summary Statistics

	Mean	Median	SD	Min	Max	N
Panel A: Geographic Panels (1816–1913)						
City-Year Level						
Artifacts acquired	0.704	0.000	18.460	0	4204	198,450
Any British battle	0.002	0.000	0.040	0	1	198,450
Number of British battles	0.002	0.000	0.075	0	10	198,450
Grid-Cell-Year Level						
Artifacts acquired	0.655	0.000	17.778	0	4216	213,248
Any British battle	0.002	0.000	0.039	0	1	213,248
Number of British battles	0.002	0.000	0.073	0	17	213,248
Panel B: Battle Leader Level						
Probate value (1900 £)	20,421	6,317	35,374	0	282,468	218
Noble or royal descent	0.204	0.000	0.404	0	1	245
Father served in military	0.355	0.000	0.480	0	1	245
Panel C: Regiment-Year Purchase Panel (1848–1868)						
All promotions	7.480	6.000	6.093	0	51	1,176
Promotions by purchase	3.556	3.000	3.155	0	18	1,176

Note: Panel A reports the city-year and grid-cell-year artifact and battle panels. Panel B reports commander characteristics for the 245 commanders who died during the probate coverage period; probate wealth is available for the 218 matched commanders and is deflated to constant 1900 pounds using the UK Retail Prices Index. Panel C reports the regiment-year officer-career panel underlying the commission-purchase analysis, covering the 25 Mutiny-treated regiments and the 31 control regiments with no substantial combat in the period over 1848–1868; commission purchases sum by-purchase promotions and by-purchase first commissions.

Table A.3: Alternative Functional Forms and Estimators

	Number of Artifacts Acquired This Year				
	(1)	(2)	(3)	(4)	(5)
Panel A. City					
Previous Year Had Any British Battle	2.150***	4.358**	1.009*	0.160***	2.756***
	(0.534)	(2.214)	(0.536)	(0.059)	(0.474)
Estimation	PPML	OLS	OLS	OLS	Negative binomial
Dependent variable	Count	Count	ln(count), positive	asinh(count)	Count
City or Grid FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Number of Observations	198,450	194,432	7,835	194,432	198,450
Mean of dep. var.	0.704	0.681	1.242	0.089	0.704
SD of dep. var.	18.460	18.183	1.385	0.493	18.460
Panel B. 1° Grid					
Previous Year Had Any British Battle	2.413***	7.235*	0.956*	0.144***	2.677***
	(0.605)	(3.951)	(0.513)	(0.051)	(0.513)
Estimation	PPML	OLS	OLS	OLS	Negative binomial
Dependent variable	Count	Count	ln(count), positive	asinh(count)	Count
City or Grid FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Number of Observations	213,248	213,248	8,476	213,248	213,248
Mean of dep. var.	0.655	0.655	1.215	0.087	0.655
SD of dep. var.	17.778	17.778	1.372	0.485	17.778

Notes: The unit of observation is a city-year in Panel A and a 1° × 1° grid-cell-year in Panel B. Treatment is a binary indicator for whether a British battle occurred in the previous year. All columns include unit and year fixed effects. Column 1 repeats the baseline PPML of Table 2. Columns 2 to 4 estimate the same specification by least squares: on the count in levels, on the log of the count over unit-years with at least one acquisition, which measures the intensive margin and drops units that become singletons once zero years are excluded, and on the inverse hyperbolic sine of the count. Column 5 estimates a negative binomial with the unit and year effects entered as dummies. A unit with no acquisition in the window has no finite fixed effect in a count model, and a zero observation that a combination of the fixed effects separates has the same property, so the count models exclude them, as the PPML routine of column 1 does. In Panel A this removes the 41 cities without a state/province string, which have no cluster, the 82 remaining cities with no acquisition in 1816–1913, and 1,902 further separated observations, leaving 184,494 observations; in Panel B it removes the 103 cells with no acquisition and 2,073 further separated observations, leaving 201,081. The negative binomial is started from the PPML solution. Observation counts and dependent-variable moments in columns 1 and 5 refer to the estimation panel, as in Table 2; those in columns 2 to 4 are the estimation samples, which in Panel A exclude the 41 cities without a cluster. Standard errors are clustered at the state/province level in Panel A and at the grid-cell level in Panel B and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.4: Extensive Margin: Any Artifact Acquired

	Any Artifact Acquired This Year (=1)			
	(1)	(2)	(3)	(4)
Previous Year Had Any British Battle	0.0413***	0.0448***	0.0358***	0.0394***
	(0.0135)	(0.0141)	(0.0122)	(0.0124)
Unit of observation	City	City	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes
Year FE	Yes		Yes	
Country × Year FE	No	Yes		
Population Decile × Year FE	No	Yes		
Area Decile × Year FE	No	Yes		
10° Block × Year FE			No	Yes
Cell Pop./Settlement Decile × Year FE			No	Yes
Number of Observations	198,450	198,450	213,248	213,248
Mean of dep. var.	0.046	0.046	0.044	0.044

Note: The unit of observation is a city-year (columns 1–2) or 1° × 1° grid-cell-year (columns 3–4). The dependent variable is an indicator equal to one if the British Museum acquired any artifact from the unit in that year; estimates are linear-probability regressions with the same fixed-effect ladders as the main PPML table. The sample is the estimation panel of units with either a British battle or an artifact acquisition during 1816–1913. Standard errors are clustered at the state/province level (city columns) or the grid-cell level (grid columns) and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.5: Robustness: Artifact-Location Measurement and Geocoding

	Number of Artifacts Acquired This Year			
	(1)	(2)	(3)	(4)
Artifact-location measure:	Baseline	Proportional distribution	City/village-precise find spot	Find spot with production-place fallback
Panel A: City				
Previous Year Had Any British Battle	2.150***	2.273***	2.671***	1.425**
	(0.534)	(0.495)	(0.569)	(0.591)
Number of Observations	198,450	198,450	198,450	227,066
Mean of dep. var.	0.704	0.704	0.462	1.424
SD of dep. var.	18.460	17.976	16.645	22.496
Panel B: 1° *Grid*				
Previous Year Had Any British Battle	2.413***	2.657***	3.017***	1.704***
	(0.605)	(0.556)	(0.647)	(0.595)
Number of Observations	213,248	213,248	213,248	246,176
Mean of dep. var.	0.655	0.655	0.430	1.353
SD of dep. var.	17.778	17.214	16.067	22.107
Artifacts in sample	139,657	139,657	91,767	332,968
City or Grid FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The units of observation are city-years in Panel A and 1° × 1° grid-cell-years in Panel B. All columns report PPML estimates of the artifact count on an indicator for a British-involved battle in the previous year and include unit and year fixed effects. Column 1 repeats the baseline of Table 2. Column 2 spreads imprecisely geolocated artifacts across the places of their country or state in proportion to precisely located inflows (Appendix B.13); column 3 restricts the outcome to artifacts geolocated at city or village precision; column 4 falls back to the production-place geocode where no find spot is recorded. Standard errors are clustered at the state/province level for city regressions and at the grid cell for grid regressions. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.6: Alternative Outcomes: Exhibited and Non-Donated Artifacts

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Outcome:	All artifacts	Ever exhibited	Excluding donations	All artifacts	Ever exhibited	Excluding donations
Previous Year Had Any British Battle	2.150***	3.270***	2.104***	2.413***	3.131***	2.472***
	(0.534)	(0.517)	(0.649)	(0.605)	(0.514)	(0.763)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	184,494	67,022	114,760	201,081	73,226	125,970
Mean of dep. var.	0.704	0.043	0.484	0.655	0.040	0.450
SD of dep. var.	18.460	1.172	17.604	17.778	1.125	17.035
Artifacts in outcome	139,657	8,616	95,971	139,657	8,616	95,971

Notes: The unit of observation is a city-year in columns 1 to 3 and a 1° × 1° grid-cell-year in columns 4 to 6. Treatment is a binary indicator for whether a British battle occurred in the previous year. All columns are PPML estimates with unit and year fixed effects. Columns 1 and 4 repeat the baseline of Table 2. Columns 2 and 5 count only the acquired artifacts that the British Museum has ever exhibited, from the exhibition histories parsed in Appendix B.14. Columns 3 and 6 exclude artifacts donated by private individuals and keeps donations routed through institutions, such as excavation funds and government departments, together with purchases, bequests, and transfers. *Artifacts in outcome* sums each outcome over the estimation panel. Observation counts are the samples PPML retains once units with no positive outcome and separated observations are dropped, so the narrower outcomes rest on fewer units; means and standard deviations are computed over the common estimation panel. In the city columns the 41 cities without a state/province string, which have no cluster, are excluded. Standard errors are clustered at the state/province level in the city columns and at the grid-cell level in the grid columns and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.7: Robustness: Alternative British-Battle Definitions and Sources

	Number of Artifacts Acquired This Year			
Battle definition:	(1) Baseline (audited)	(2) Regular forces only	(3) HCED British tag	(4) Wikidata British battles
Panel A: City				
Previous Year Had Any British Battle	2.150***	2.159***	2.123***	1.739***
	(0.534)	(0.542)	(0.531)	(0.651)
Number of Observations	198,450	198,450	198,450	198,450
Mean of dep. var.	0.704	0.704	0.704	0.704
SD of dep. var.	18.460	18.460	18.460	18.460
Panel B: 1° Grid				
Previous Year Had Any British Battle	2.413***	2.416***	2.399***	2.499***
	(0.605)	(0.606)	(0.604)	(0.862)
Number of Observations	213,248	213,248	213,248	213,248
Mean of dep. var.	0.655	0.655	0.655	0.655
SD of dep. var.	17.778	17.778	17.778	17.778
Battles entering treatment	474	439	494	143
City or Grid FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The unit of observation is a city-year in Panel A and a $1° \times 1°$ grid-cell-year in Panel B. Each column re-estimates the baseline one-year PPML with the previous-year British-battle indicator recoded from an alternative battle list; the estimation sample, fixed effects, and clustering are unchanged throughout. Column 1 uses the audited 474 British battles of Section 3.2. Column 2 restricts to the 439 battles in which the regular British Army, Royal Navy, or Royal Marines fought (Appendix B.3). Column 3 recodes the treatment from the engagements tagged as British by Miller and Bakar (2023), whose looser participant strings count any British-related engagement. Column 4 recodes the treatment from the battle-typed Wikidata items dated 1816–1913 that carry a British-participant statement, a list compiled and geocoded independently of the baseline. Standard errors are clustered at the state/province level in Panel A and the grid-cell level in Panel B. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.8: Robustness: Battle-Year Assignment

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***	2.117***	2.117***	2.413***	2.387***	2.387***
	(0.534)	(0.530)	(0.530)	(0.605)	(0.605)	(0.605)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
Battle Year Assignment	Start Year	End Year	Random Year	Start Year	End Year	Random Year
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	198,450	198,450	198,450	213,248	213,248	213,248
Mean of dep. var.	0.704	0.704	0.704	0.655	0.655	0.655
SD of dep. var.	18.460	18.460	18.460	17.778	17.778	17.778

Note: The unit of observation is a city-year in columns 1–3 and a $1° \times 1°$ grid-cell-year in columns 4–6. Each column re-estimates the baseline one-year PPML with multi-year battles assigned to their start year, end year, or a random year between the two endpoints (seed = 24); single-year battles are unaffected. Only 14 of the 474 battles span more than one calendar year, so the end-year and random-year assignments coincide at the displayed precision. Standard errors are clustered at the state/province level in columns 1–3 and at the grid-cell level in columns 4–6. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.9: Robustness: Influential Observations

	Number of Artifacts Acquired This Year			
Panel A: Winsorizing and trimming				
	(1)	(2)	(3)	
Previous Year Had Any British Battle	2.150***	2.137***	1.886***	
	(0.534)	(0.479)	(0.493)	
Outlier Handling	None	Winsor at event p99	Trim at event p99	
Number of Observations	198,450	198,450	198,359	
Mean of dep. var.	0.704	0.528	0.425	
SD of dep. var.	18.460	6.938	5.003	
Panel B: Top-coding the outcome				
	(1)	(2)	(3)	
Previous Year Had Any British Battle	0.976***	1.474***	1.785***	
	(0.284)	(0.392)	(0.436)	
Top-Coding	Capped at 10	Capped at 50	Capped at 100	
Number of Observations	198,450	198,450	198,450	
Mean of dep. var.	0.186	0.360	0.441	
SD of dep. var.	1.142	3.184	4.667	
Panel C: Dropping top artifact cities				
	(1)	(2)	(3)	(4)
Previous Year Had Any British Battle	2.101***	2.064***	2.042***	2.189***
	(0.532)	(0.536)	(0.542)	(0.545)
Sample	Drop Top 1	Drop Top 3	Drop Top 5	Drop Top 10
Number of Observations	198,352	198,156	197,960	197,470
Mean of dep. var.	0.670	0.619	0.584	0.525
SD of dep. var.	15.536	14.056	13.124	10.347
Panel D: Dropping top battle cities				
	(1)	(2)	(3)	(4)
Previous Year Had Any British Battle	2.150***	2.273***	2.276***	2.040***
	(0.534)	(0.533)	(0.533)	(0.605)
Sample	Drop Top 1	Drop Top 3	Drop Top 5	Drop Top 10
Number of Observations	198,352	198,156	197,960	197,470
Mean of dep. var.	0.704	0.703	0.704	0.703
SD of dep. var.	18.465	18.470	18.479	18.494
Panel E: Country jackknife				
	(1)	(2)	(3)	(4)
Previous Year Had Any British Battle	2.223***	2.321***	1.558***	2.046***
	(0.547)	(0.526)	(0.580)	(0.591)
Country Dropped	India	China	Afghanistan	Nigeria
Number of Observations	187,180	193,550	196,882	195,020
Mean of dep. var.	0.723	0.707	0.698	0.711
SD of dep. var.	18.965	18.635	18.360	18.614
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The unit of observation is a city-year. All panels report PPML estimates of the artifact count on the previous-year British-battle indicator with city and year fixed effects. Panel A winsorizes or trims the outcome at the 99th percentile of the positive city-year cells; Panel B caps the count at 10, 50, or 100; Panels C and D drop the top sample cities by total artifact count and by British battles hosted; Panel E drops each listed country in turn, and all 194 leave-one-country-out estimates remain significant at the 1% level. The common baseline is reported once in Panel A, column (1). Standard errors are clustered at the state/province level and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.10: Robustness: Sample, Spatial Units, and Spatial Inference

	Number of Artifacts Acquired This Year				
Panel A: Sample support					
	(1)	(2)	(3)	(4)	(5)
Sample	Battle or artifact	All cities	Battle cities	Artifact cities	Battle and artifact
Previous Year Had Any British Battle	2.150***	2.150***	2.545***	2.150***	2.545***
	(0.534)	(0.534)	(0.486)	(0.534)	(0.486)
Number of Observations	198,450	719,516	21,462	190,218	13,230
Mean of dep. var.	0.704	0.194	0.403	0.734	0.654
Panel B: Cities documented as existing					
	(1)	(2)	(3)		
Restriction	Baseline	Existed by 1900	Existed by 1815		
Previous Year Had Any British Battle	2.150***	2.212***	2.723***		
	(0.534)	(0.553)	(0.607)		
Number of Observations	198,450	161,504	120,540		
Mean of dep. var.	0.704	0.759	0.860		
Number of cities	2,025	1,648	1,230		
Panel C: Panel extended to 1753–1913					
	(1)	(2)			
Unit of observation	City	1° Grid			
Previous Year Had Any British Battle	2.134***	2.394***			
	(0.526)	(0.596)			
Number of Observations	350,658	373,037			
Mean of dep. var.	0.403	0.379			
Panel D: Coarser spatial units					
	(1)	(2)	(3)	(4)	(5)
Unit of observation	City	State/Prov.	1° Grid	2° Grid	5° Grid
Previous Year Had Any British Battle	2.150***	1.832***	2.413***	1.789***	1.182**
	(0.534)	(0.474)	(0.605)	(0.679)	(0.569)
Number of units	2,025	1,198	2,176	1,335	572
Number of Observations	198,450	117,404	213,248	130,830	56,056
Mean of dep. var.	0.704	1.190	0.655	1.067	2.491
Panel E: Conley standard errors, city panel, inverse hyperbolic sine of the count					
	(1)	(2)	(3)	(4)	
Conley cutoff	100 km	200 km	500 km	1,000 km	
Previous Year Had Any British Battle	0.159***	0.159***	0.159***	0.159**	
	(0.051)	(0.054)	(0.059)	(0.062)	
Number of Observations	198,450	198,450	198,450	198,450	
Mean of dep. var.	0.091	0.091	0.091	0.091	
Panel F: Conley standard errors, 1° grid panel, inverse hyperbolic sine of the count					
	(1)	(2)	(3)	(4)	
Conley cutoff	100 km	200 km	500 km	1,000 km	
Previous Year Had Any British Battle	0.144***	0.144***	0.144**	0.144**	
	(0.051)	(0.056)	(0.060)	(0.063)	
Number of Observations	213,248	213,248	213,248	213,248	
Mean of dep. var.	0.087	0.087	0.087	0.087	
Unit FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Note: The unit of observation is a city-year unless the panel states otherwise. Panels A to D report PPML estimates of the artifact count on the previous-year British-battle indicator with unit and year fixed effects, clustered at the state/province level for city units and at the unit for coarser units. Panel A varies the inclusion rule: the baseline sample of cities with a British battle or an acquisition, all 7,342 listed cities, battle cities only, artifact cities only, and their intersection. Poisson estimation retains only units with a positive outcome, so the all-cities and artifact-cities samples reproduce the baseline and the battle-cities sample coincides with the intersection; observation counts are the samples before that pruning. Panel B compares the baseline with cities that existed by 1900 or 1815, using Reba et al. (2016) and historical source reviews of battle and control cities lacking early population records. Resident towns and villages qualify, including Indigenous predecessors. Unresolved dates and disputed locations do not qualify. Panel B reports observations, outcome means, and city counts before Poisson pruning. Panel C extends the panel to the Museum's 1753 founding, adding the Seven Years' War, the American Revolution, and the French Revolutionary and Napoleonic wars (652 further British battles) and 21,471 pre-1816 acquisitions. Panel D sums artifacts and battles over state/province units and over 2° and 5° cells, keeping units that ever host a battle or an acquisition. Panels E and F report the OLS analog of the baseline on the inverse hyperbolic sine of the count with Conley (1999) standard errors, since spatial-correlation-robust errors are not available for PPML with high-dimensional fixed effects. The Bartlett kernel declines to zero at cutoffs of 100, 200, 500, and 1,000 km, and serial correlation within units is unrestricted. The point estimate is the same across cutoffs by construction. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.11: Robustness: Unit-Specific Linear Trends

	Number of Artifacts Acquired This Year			
	(1)	(2)	(3)	(4)
Previous Year Had Any British Battle	2.150***	2.017***	2.413***	2.231***
	(0.534)	(0.552)	(0.605)	(0.668)
Unit of observation	City	City	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Unit-specific linear trend	No	Yes	No	Yes
Number of Observations	198,450	198,450	213,248	213,248
Mean of dep. var.	0.704	0.704	0.655	0.655
SD of dep. var.	18.460	18.460	17.778	17.778

Note: The unit of observation is a city-year in columns 1–2 and a 1° × 1° grid-cell-year in columns 3–4. The dependent variable is the count of artifacts the British Museum acquired from the unit in the year, and the treatment is an indicator for a British battle in the unit in the previous year. Columns 1 and 3 reproduce the baseline specifications of Table 2, columns 1 and 4, with unit and year fixed effects. Columns 2 and 4 add a separate linear time trend for every city or grid cell. Estimation is by Poisson pseudo-maximum likelihood. Standard errors are clustered at the state/province level in the city specifications and at the grid-cell level in the grid specifications. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.12: Prior Acquisitions and the Probability of a British Battle

	British Battle This Year (× 100)					
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Regressor is any acquisition in the previous year (a separate regression in each column)						
Any Acquisition in the Previous Year	-0.053	-0.042	-0.027	-0.047	-0.050	-0.039
	(0.039)	(0.041)	(0.042)	(0.038)	(0.041)	(0.041)
Number of Observations	192,448	189,247	189,053	211,072	206,513	206,513
Mean of dep. var.	0.161	0.161	0.161	0.152	0.155	0.155
Panel B: Regressor is any acquisition in any of the previous three years (a separate regression in each column)						
Any Acquisition in the Previous Three Years	-0.025	0.006	0.009	-0.024	-0.004	0.005
	(0.028)	(0.028)	(0.029)	(0.027)	(0.028)	(0.029)
Number of Observations	188,480	185,345	185,155	206,720	202,255	202,255
Mean of dep. var.	0.158	0.158	0.158	0.150	0.153	0.153
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	–	–	Yes	–	–
Country × Year FE	No	Yes	Yes	–	–	–
Pop./Area Decile × Year FE	No	No	Yes	–	–	–
10° Block × Year FE	–	–	–	No	Yes	Yes
Cell Pop./Settlement Decile × Year FE	–	–	–	No	No	Yes

Note: The unit of observation is a city-year in columns 1–3 and a 1° × 1° grid-cell-year in columns 4–6. The dependent variable is an indicator for a British battle in the unit in the year, multiplied by 100, so that coefficients are in percentage points and can be compared with the sample battle rate reported as the mean of the dependent variable. Panels A and B report separate regressions, each with a single regressor: an indicator for any acquisition by the British Museum from the unit in the previous year in Panel A, and in any of the previous three years in Panel B. Each column applies the sample and fixed effects of the corresponding column of Table 2; the fixed-effect rows apply to both panels. Estimation is by ordinary least squares. Standard errors are clustered at the state/province level in the city specifications and at the grid-cell level in the grid specifications. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.13: Robustness: Incident-Triggered Battles

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***			2.413***		
	(0.534)			(0.605)		
Previous-Year Battle, Incident-Triggered		2.397**	3.335***		3.685***	5.575***
		(0.950)	(0.673)		(0.999)	(1.027)
Previous-Year Battle, Other		2.075***	2.680***		1.772***	2.491***
		(0.623)	(0.399)		(0.616)	(0.652)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
Estimation	PPML	PPML	PPML	PPML	PPML	PPML
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	No	Yes	Yes	No
Country × Year FE	No	No	Yes			
Pop./Area Decile × Year FE	No	No	Yes			
10° Block × Year FE				No	No	Yes
Cell Pop./Settlement Decile × Year FE				No	No	Yes
Number of Observations	198,450	198,450	198,450	213,248	213,248	213,248
Mean of dep. var.	0.704	0.704	0.704	0.655	0.655	0.655
SD of dep. var.	18.460	18.460	18.460	17.778	17.778	17.778

Note: The unit of observation is a city-year in columns 1–3 and a $1° \times 1°$ grid-cell-year in columns 4–6. Columns 1 and 4 report the baseline PPML specification. Columns 2, 3, 5, and 6 split the previous-year British-battle indicator by whether a prior anti-British incident triggered the expedition (Appendix B.3). Columns 2 and 5 include unit and year fixed effects, and columns 3 and 6 use the strict fixed effects of Table 2. Standard errors are clustered at the state/province level for city specifications and at the grid-cell level for grid specifications. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.14: Placebo Tests: Civil-War and French-Only Battles

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***			2.413***		
	(0.534)			(0.605)		
Previous Year Had Civil-War Battle		-1.455*			-1.366*	
		(0.878)			(0.729)	
Previous Year Had French-Only Battle			-2.225***			-2.460***
			(0.491)			(0.436)
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid
City or Grid FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	198,450	198,450	198,450	213,248	213,248	213,248
Mean of dep. var.	0.704	0.704	0.704	0.655	0.655	0.655
SD of dep. var.	18.460	18.460	18.460	17.778	17.778	17.778

Note: The unit of observation is a city-year in columns 1–3 and a $1° \times 1°$ grid-cell-year in columns 4–6. Each column estimates the placebo specification of Table 4, and columns 1 and 4 reproduce its baseline previous-year British-battle coefficient. Columns 2 and 5 replace the treatment with civil-war battles, defined as internal conflicts with no foreign or foreign-led combatant (Appendix B.3). Columns 3 and 6 replace the treatment with battles involving French forces in which British forces did not participate. Both placebo indicators additionally require that the unit hosted no British battle in the same year, so that allied engagements in shared theaters are not counted as placebo events. Standard errors are clustered at the state/province level in columns 1–3 and at the grid-cell level in columns 4–6; *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.15: Artifact Acquisitions after a City's First British Battle: Pooled Estimates

	Asinh of decade artifact count					Any acquisition
	Staggered event study			Synthetic DiD		Staggered event study
	(1)	(2)	(3)	(4)	(5)	(6)
Post-battle average, decades 0–5	0.172***	0.131***	0.112*	0.137**	0.144**	0.039***
	(0.056)	(0.044)	(0.057)	(0.060)	(0.061)	(0.014)
Estimator	BJS	SA	dCDH	SDID	SDID	SA
Control group	No or not-yet British battle	No British battle	No or not-yet British battle	No British battle	No British battle, battle countries	No British battle
City FE	Yes	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes	Yes
Number of Battle Cities	216	216	216	216	216	216
Number of Control Cities	2,883	2,883	2,883	2,883	1,181	2,883
Number of Observations	84,320	86,772	86,772	63,135	27,393	86,772

Note: The unit of observation is a city-decade on the 1750–2024 panel of Section 4.5. The outcome in columns 1 to 5 is the inverse hyperbolic sine transformation of the decade artifact count, and in column 6 an indicator equal to one if the Museum acquired at least one artifact from the city in the decade. Each column reports one coefficient: the average effect over the battle decade and the five decades after it, so it pools the horizon coefficients of Figure 3 and Figure A.24 into one number. Columns 1 to 3 are the three staggered estimators of equation (3). Their control groups are cities with no British battle and, for columns 1 and 3, battle cities in the decades before their first battle. Column 1, the imputation estimator of Borusyak et al. (2024), averages over battle-city decades within six decades of the first battle, dropping later treated decades, which is why it has fewer observations than column 2. Column 2, the interaction-weighted estimator of Sun and Abraham (2021), averages the six horizon coefficients with weights equal to the number of battle-city decades at each horizon. Column 3 is the average total effect of de Chaisemartin and D'Haultfœuille (2026), estimated on the same panel as column 2. Column 6 repeats the estimator of column 2 with the any-acquisition indicator, so its coefficient is in units of probability, against a rate for cities with no British battle of about one decade in five (Figure A.25). Columns 4 and 5 are the synthetic difference-in-differences estimates of Arkhangelsky et al. (2021) under the two donor pools of Figure A.24: all cities with no British battle, and those in the countries where Britain fought. All columns net out city and decade effects, in columns 4 and 5 through the weighted differencing of the estimator. Observation counts in columns 4 and 5 are the distinct city-decades entering the cohort panels, 21 decades for each donor city and 12 for each battle city. Standard errors in columns 1 to 3 and 6 are clustered at the state/province level. Standard errors in columns 4 and 5 are from a delete-one jackknife over state/province clusters that holds the fitted weights fixed. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.16: Artifact Acquisitions by Military Professionalization and Historical Material Culture

	Military Professionalization (1800–1900)		Material Culture (1500 AD)	
	(1) Below Median	(2) At/Above Median	(3) Below Median	(4) At/Above Median
Previous Year British Battle	3.984***	0.511	0.264	2.351***
	(0.642)	(0.652)	(0.558)	(0.598)
Country Median Cutoff	-0.336	-0.336	0.383	0.383
City FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Number of Countries	56	56	57	58
Number of Observations	58,604	92,530	63,976	93,605
Mean of Dep. Var.	0.929	0.636	0.428	0.952

Note: The unit of observation is a city-year in the 1816–1913 had-either sample. All columns report PPML estimates with city and year fixed effects; treatment indicates a British battle in the city in the previous year. Columns 1–2 proxy military professionalization with the Coppedge et al. (2026) indicator of whether armed-forces personnel are salaried employees paid from state coffers rather than compensated through fees, perquisites, or a patron, averaged over 1800–1900. Higher scores indicate more developed military institutions. Columns 3–4 use the Comin et al. (2010) historical-technology index in 1500 AD. The professionalization measure carries nineteenth-century values for 112 countries, 34 of them battle countries, and is not projected back from post-independence data. It correlates at 0.08 with the material-culture index and at 0.19 with nineteenth-century GDP per capita from the Maddison Project Database, so the two splits do not restate one income ranking. Median cutoffs use one observation per source-matched sample country (Appendix B.12). Standard errors are clustered at the state/province level and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.17: Explicit-Loot Provenance: Example Acquisition Notes

Event	Museum no.	Acq. year	Acquisition note (excerpt)
Sack of Benin City, 1897 (311)	Af1898,0115.10	1898	Following the British occupation of Benin City (Edo) in 1897 objects made of brass, ivory and wood were looted by British forces from the royal palace, its storerooms and compounds. Some of these objects were sold or exchanged on the coast. However, many were brought to the UK where they were sold through private auction, donated to museums, or retained by soldiers of the expedition. [. . .]
Maqdala, 1868 (36)	Af1868,1001.29	1868	Looted by Richard Holmes at Maqdala (13 April 1868). After the military assault on Maqdala, official orders were given for all loot to be handed over to the Army Prize Committee. However, Holmes was given permission by Robert Napier (Commander in Chief of the Abyssinian Campaign) to retain some objects (described as 'prizes'). [. . .]
Anglo-Asante wars, 1873–74 / 1895–96 (28)	Af1900,0427.2.a-c	1900	Taken from the royal palace in Kumasi by British troops during the fourth Anglo-Ashanti (Anglo-Asante) War, 1895-6. Formed part of the official government loot. Associated with the Asantehene Prempeh I and recorded as an item of his regalia (with items numbered Af1900,0427.1, 3-10, 12-22). [. . .]
Yok Obolo shrine, 1904 (11)	Af1905,0413.62	1905	In September 1904 British forces led by Alfred Ashmall Whitehouse destroyed the Yok Obolo shrine and confiscated objects from it. The shrine belonged to the Obolo peoples. See Collection File Af1905,0413, previously EthDoc 209, for report by Whitehouse, Colonial Government of Southern Nigeria, 6.9.1904.

Note: This table reports one representative acquisition note for each originating event of the explicit-loot provenance set (Appendix B.18). The number in parentheses after each event is the count of in-window explicit-loot artifacts attributed to it.

Table A.18: Inputs to the Back-of-the-Envelope Calculation

Years after the battle (h)	Coefficient ($\widehat{\beta}_h$)	City-years (N_h)	Mean acquisitions ($\bar{y}_h$)	$N_h \bar{y}_h (1 - e^{-\widehat{\beta}_h})$
0 (battle year)	0.62	316	0.97	141
1	2.10	270	5.55	1,315
2	0.83	263	0.89	133
3	−0.11	259	0.51	−16
Total		1,108		1,573

Note: The unit of observation is a city-year in the 1816–1913 city panel. Each row is a horizon h, the number of years since the city's most recent British battle, so a city-year with two battles inside the four-year window is assigned to the later one. $\widehat{\beta}_h$ is the coefficient on the horizon-h indicator in the event study of Figure 2, estimated by PPML with city and year fixed effects. N_h is the number of city-years at horizon h and $\bar{y}_h$ the mean number of artifacts the British Museum acquired from them in the year, counting city-years with no acquisition. The last column is the acquisitions attributable to the battle at that horizon, the observed mean less the mean divided by the multiplier $e^{\widehat{\beta}_h}$, times the number of city-years. Its total is the figure reported in Section 4.7, and Appendix B.16 reports the version that combines overlapping battle terms and its confidence interval.

Table A.19: Probated Wealth and Artifact-Heavy Battles: Winsorized and Trimmed Estimates

	Probate Wealth at Death (£ thousand, 1900 prices)			
	Winsorized at 99th pct.		Trimmed at 99th pct.	
	(1)	(2)	(3)	(4)
Panel A: 3-Year Window				
Number of artifact-heavy (strict 2× pre) battles	12.276*	14.294*	10.534*	12.954**
	(6.620)	(7.367)	(5.852)	(6.279)
Number of artifact-heavy (any post-inflow) battles	6.879***	8.399***	5.810***	7.091***
	(2.241)	(2.713)	(2.024)	(2.333)
Number of artifact-heavy (above median, inflow > 0) battles	13.645**	15.378**	12.077**	14.424**
	(6.622)	(7.282)	(5.903)	(6.225)
Panel B: 20-Year Window				
Number of artifact-heavy (strict 2× pre) battles	10.651***	11.634***	8.595***	9.229***
	(3.317)	(3.636)	(2.984)	(2.896)
Number of artifact-heavy (any post-inflow) battles	6.429***	6.983***	5.673***	6.306***
	(1.889)	(2.000)	(1.868)	(1.898)
Number of artifact-heavy (above median, inflow > 0) battles	9.715***	10.632***	8.143***	8.829***
	(2.878)	(3.128)	(2.628)	(2.519)
Background and Rank Controls	No	Yes	No	Yes
Number of Observations	218	218	215	215
Mean of dep. var. (£k, 1900)	19.83	19.83	17.70	17.70
SD of dep. var. (£k, 1900)	31.83	31.83	26.37	26.37

Note: The unit of observation is a battle commander linked to a probate record. The dependent variable is the commander's deflated estate at death (£ thousand, constant 1900 prices), winsorized at the 99th percentile of the estimation sample (columns 1–2) or trimmed above it (columns 3–4), the same 99th-percentile convention as the city-level outlier checks; the cutoff is about £173,000 and affects three estates. Each cell is a separate OLS regression of the estate value on the count of artifact-heavy battles the commander led, under the three definitions and two accounting windows of Table 7. Columns 1 and 3 include no controls; columns 2 and 4 add the pre-treatment background and rank controls of that table. Standard errors (in parentheses) are heteroskedasticity-robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.20: Probated Wealth: Alternative Functional Forms

	Log Probate Wealth at Death (1900 prices)		Probate Wealth at Death (£ thousand, PPML)	
	(1)	(2)	(3)	(4)
Panel A: 3-Year Window				
Number of artifact-heavy (strict 2× pre) battles	0.323	0.375	0.417**	0.558**
	(0.283)	(0.284)	(0.168)	(0.218)
Number of artifact-heavy (any post-inflow) battles	0.203*	0.232	0.215***	0.401***
	(0.120)	(0.146)	(0.048)	(0.098)
Number of artifact-heavy (above median, inflow > 0) battles	0.398	0.421	0.453***	0.578***
	(0.281)	(0.277)	(0.163)	(0.210)
Panel B: 20-Year Window				
Number of artifact-heavy (strict 2× pre) battles	0.295**	0.339**	0.352***	0.393***
	(0.141)	(0.148)	(0.068)	(0.112)
Number of artifact-heavy (any post-inflow) battles	0.204**	0.240**	0.218***	0.265***
	(0.084)	(0.094)	(0.044)	(0.060)
Number of artifact-heavy (above median, inflow > 0) battles	0.244*	0.283**	0.332***	0.382***
	(0.133)	(0.137)	(0.061)	(0.105)
Background and Rank Controls	No	Yes	No	Yes
Number of Observations	217	217	218	218
Mean of dep. var.	1.85	1.85	20.42	20.42
SD of dep. var.	1.68	1.68	35.37	35.37

Note: The unit of observation is a battle commander linked to a probate record. Columns 1–2 estimate OLS with the log of the deflated estate at death as the outcome, which drops the one commander with zero recorded wealth; columns 3–4 estimate Poisson pseudo-maximum-likelihood on the level of the estate, the tail-robust analog of the artifact-side estimator. Coefficients in both blocks read as approximate proportional effects of an additional artifact-heavy battle. Definitions, sample, controls, and windows are as in Table 7; columns 1 and 3 include no controls, columns 2 and 4 the pre-treatment background and rank controls. The 20-year window holds across all definitions in both blocks. In the log block the 3-year window is imprecise, consistent with an effect concentrated in the right tail that matures slowly. Standard errors (in parentheses) are heteroskedasticity-robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.21: Probated Wealth: Sensitivity to the Accounting Window

	Probate Wealth at Death (£ thousand, 1900 prices)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Accounting window (years)	2	3	4	5	20	30	40	50
Number of artifact-heavy battles:								
strict 2× pre	16.165*	14.380*	11.358*	9.594*	13.390***	10.832***	10.997***	7.806***
	(8.643)	(7.704)	(6.037)	(5.019)	(4.811)	(3.740)	(3.399)	(2.430)
any post-inflow	6.599**	9.238***	10.438**	10.792***	7.432***	7.423***	6.860***	6.160***
	(3.114)	(3.084)	(4.172)	(3.827)	(2.187)	(1.892)	(1.704)	(1.869)
above median, inflow > 0	17.263**	15.381**	13.840**	9.989**	12.068***	10.254***	10.852***	10.350***
	(8.481)	(7.612)	(5.699)	(4.903)	(4.052)	(3.336)	(3.250)	(3.013)
Artifact-heavy battles:								
strict 2× pre	33	37	40	44	80	103	127	147
any post-inflow	70	81	93	105	196	177	221	217
above median, inflow > 0	35	39	45	52	98	122	135	137
British battles	474	474	474	474	474	474	474	474
Background and Rank Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	218	218	218	218	218	218	218	218
Mean of dep. var. (£k, 1900)	20.42	20.42	20.42	20.42	20.42	20.42	20.42	20.42
SD of dep. var. (£k, 1900)	35.37	35.37	35.37	35.37	35.37	35.37	35.37	35.37

Note: The unit of observation is a battle commander linked to a probate record, and the sample is the 218 commanders of Table 7; the dependent variable is the commander's deflated estate at death (£ thousand, 1900 prices). Each cell is a separate OLS regression of the estate on the count of artifact-heavy battles the commander led, and each column applies a different accounting window to the British Museum inflow of the battle's nearest city. For a window of w years and a battle in year y, the pre-battle inflow is summed over years $y - w$ to $y - 1$ and the post-battle inflow over years $y + 1$ to $y + w$, with the battle year excluded from both. The three definitions are those of Table 7: post-battle inflow more than twice the pre-battle inflow, or more than five artifacts where the pre-battle inflow is zero (strict 2× pre); post-battle inflow above the median across all British battles (any post-inflow); and post-battle inflow above the median among battles with positive post-battle inflow (above median, inflow > 0). The footer rows give the number of British battles classified artifact-heavy under each definition at each window, and the total number of British battles. Columns (2) and (5) reproduce column (2) of Table 7. Controls and standard errors are as in Table 7. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.22: Probated Wealth: Margins of the Artifact-Heavy Treatment

	Probate Wealth at Death (£ thousand, 1900 prices)	
	(1)	(2)
Panel A: 3-Year Window		
Number of artifact-heavy (strict 2× pre) battles	12.252*	14.380*
	(6.848)	(7.704)
Any artifact-heavy (strict 2× pre) battle	18.817*	20.069*
	(9.572)	(10.367)
asinh(post-battle BM inflow)	4.849**	5.016**
	(1.947)	(2.191)
asinh(net post-battle BM inflow)	4.195**	4.283**
	(1.753)	(1.931)
Panel B: 20-Year Window		
Number of artifact-heavy (strict 2× pre) battles	12.103***	13.390***
	(4.155)	(4.811)
Any artifact-heavy (strict 2× pre) battle	15.891**	16.957**
	(7.754)	(8.365)
asinh(post-battle BM inflow)	2.825**	3.021**
	(1.255)	(1.334)
asinh(net post-battle BM inflow)	1.927*	2.104**
	(1.009)	(0.996)
Background and Rank Controls	No	Yes
Number of Observations	218	218
Mean of dep. var. (£k, 1900)	20.42	20.42
SD of dep. var. (£k, 1900)	35.37	35.37

Note: The unit of observation is a battle commander linked to a probate record; the dependent variable is the commander's deflated estate at death (£ thousand, constant 1900 prices). Each row is a separate OLS regression on one margin of the artifact-heavy treatment: the count of artifact-heavy battles under the strict 2×-pre definition (the baseline treatment of Table 7), an indicator for having led any such battle, the inverse hyperbolic sine transformation of the commander's total post-battle British Museum inflow, and the same transformation of the net inflow, the post-window total minus the pre-window total, whose negative values the transformation accommodates. Sample, controls, windows, and standard errors are as in Table 7. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.23: Lee Bounds on the Probate Wealth Estimates under Linkage Selection

	Probated Wealth (£, 1900 prices)	
Artifact-heavy definition:	(1) Strict (2× pre), 3-year window	(2) Strict (2× pre), 20-year window
Lower bound	19,882*	16,835**
	(10,358)	(8,330)
Baseline	19,981*	16,906**
	(10,366)	(8,362)
Upper bound	22,805**	18,323**
	(10,125)	(8,226)
Match rate, artifact-heavy commanders	0.879	0.883
Match rate, other commanders	0.891	0.891
Trimming share	0.014	0.009
Number of Observations	217	217

Note: The unit of observation is a battle leader who died within the probate coverage window, 1858 onward. Selection is the probate linkage itself, and a leader counts as matched when the calendars yield a record, whatever its value, as about 89 percent do. The dependent variable is probated wealth in constant 1900 pounds and the treatment is an indicator for any strict artifact-heavy battle at the 3-year (column 1) or 20-year (column 2) window. Commanders who led no artifact-heavy battle are matched at a slightly higher rate than those who did, reported in the footer rows, so Lee (2009) bounds equalize the two rates by trimming that group by the excess-match share. Removing its largest estates raises the estimated premium and removing its smallest estates lowers it, and I re-estimate the regression on each trimmed sample. The controls are the age-at-first-battle decade, rank group at first battle, and the background indicators of Table A.22, so the baseline row reports that table's specification on this sample. The sample holds one leader fewer than that table because Henry Havelock died in 1857, before the calendars begin. Standard errors are heteroskedasticity-robust and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.24: Prize Money of the Sample Commanders

Commander	Fund	Source	Receipt (£, 1900)	Probate (£, 1900)	Prize to probate (%)
Tier 1: Sums stated for the commander					
Combermere	Bhurtpore	Biddulph (1933, p. 230)	55,758	16,356	340.9
Colin Campbell	Banda and Kirwee, Lucknow, Jhansi, Kotah	*London Gazette* 22478, 23216	29,332	102,222	28.7
George Whitlock	Banda and Kirwee	*London Gazette* 23216, 23341–23429	10,350	8,280	125.0
Harry Smith	Sutlej	Military Letter 24 of 1846	2,356	5,935	39.7
Edmund Lyons	Kertch and Yenikale	Lords, 7 Mar 1864, *London Gazette* 22814	1,476	45,495	3.2
Hugh Rose	Jhansi	*London Gazette* 23216, 23361	753	70,758	1.1
Thomas Willshire	Kelat	*Allen's Indian Mail* 6 (1848), p. 631	605	24,731	2.4
Willoughby Cotton	Ghuznee	IOR L/MIL/5/259	367	49,462	0.7
Charles Fitzgerald	Deccan	*London Gazette* 18447, 18962, 20739	216	46,000	0.5
Francis Rowcroft	Sarun	*London Gazette* 22675	203	1,423	14.3
Charles Stuart	Jhansi	*London Gazette* 23216	186	14,154	1.3
Henry Roberts	Kotah	*London Gazette* 23216	114	2,968	3.8
Michael Smith	Jhansi	*London Gazette* 23216	62	15,387	0.4
John Haughton	Ghuznee	IOR L/MIL/5/259	15	3,614	0.4
Tier 2: Sums imputed from rank at the battle					
Archdale Wilson	Delhi	*London Gazette* 22478	11,292	3,680	306.8
Michael Seymour	Canton 1857	*London Gazette* 22479	1,397	30,635	4.6
Edward Greathed	Delhi	*London Gazette* 22478, 22594	289	17,673	1.6
James Outram	Lucknow	*London Gazette* 22478, 22597	264	30,667	0.9
Robert Napier	Abyssinia	*London Gazette* 23879	230	9,398	2.4
Thomas Seaton	Delhi	*London Gazette* 22594, 22649	145	1,408	10.3
William Mansfield	Lucknow	*London Gazette* 22478	128	56,327	0.2
Adrian Hope	Lucknow	*London Gazette* 22478	86	303	28.3
Alfred Horsford	Lucknow	*London Gazette* 22478	86	11,310	0.8
Frederick Evelegh	Lucknow	*London Gazette* 22478	86	71,334	0.1
Robert Walpole	Lucknow	*London Gazette* 22478	86	32,857	0.3
Thomas Franks	Lucknow	*London Gazette* 22478	86	3,957	2.2
William Peel	Lucknow	*London Gazette* 22478, 23017	86	35,385	0.2
Henry Havelock	Lucknow	*London Gazette* 22478, 22597	30	1,380	2.1
Frederick Roberts	Kotah	*London Gazette* 23216, 23308	8	72,571	0.0

Note: This table lists every commander of the 218-person probate sample for whom the records give a cash prize from a fund raised on land, one row per commander, sorted by receipt within tier. Tier 1 holds sums known exactly for the man: a document prints his amount by name, such as a prize roll, a Company letter, a Hansard answer, or a biography, or the Royal Warrant assigns his office a fixed fraction of a fund whose total the *London Gazette* prints, or the distribution notice prints the amount of his rank class outright. Tier 2 holds sums imputed from the man's presence at the battle and the rank he held there, multiplying the shares of his rank class by the gazetted value of a share; two rows add one further input from a sister fund, Wilson's day count in command from the campaign chronology and Napier's Abyssinia proportions from Bhurtpore. Entitlements that rest on an assumption about the man's presence on a roll, his command, or an unprinted share value are excluded, as is Hope Grant, who resigned his Pekin share of 1860 in favour of the men, and prize for vessels captured at sea. Imputed sums use the gazetted first-distribution rates, and where later distributions were gazetted without a rate the sum is a floor. IOR is the India Office prize roll. I convert rupees at ten to the pound and nominal sums to 1900 prices at the year of distribution. *Probate* is the commander's probated wealth at 1900 prices from Section 3.3, and the final column is the 1900-price receipt as a percentage of it.

Table A.25: Artifact-Heavy Battles and Career Outcomes

	Peerage at death		High office	
	(1)	(2)	(3)	(4)
Number of artifact-heavy battles led	0.135**	0.129***	0.005	0.093**
	(0.062)	(0.029)	(0.078)	(0.039)
Window	3-year	20-year	3-year	20-year
Background and rank controls	Yes	Yes	Yes	Yes
Number of Observations	218	218	218	218
Mean of dep. var.	0.073	0.073	0.284	0.284

Note: The unit of observation is a battle commander linked to a probate record. Each column is a separate OLS regression of one career outcome, measured at death, on the commander's count of artifact-heavy battles under the strict 2×-pre definition of Table 7, at the 3-year window in columns 1 and 3 and the 20-year window in columns 2 and 4, with the pre-treatment controls of that table: age-at-first-battle decade bins, rank-at-battle fixed effects, and birth-country, noble-family, father-military, and regiment-type indicators. *Peerage at death* indicates a peerage held at death, from the title taxonomy of Appendix B.4. Forty-one commanders have no recorded title, and the build reads a blank as no title. *High office* indicates a post of one of two kinds held after a battle the commander led, coded from the full biographies: a civil office of state, meaning a colonial or Indian governorship in any form (governor, governor-general, lieutenant-governor, or acting governor), an administratorship, a high, chief, or deputy commissionership, a residency, a seat on the Governor-General's Council, or a ministerial or ambassadorial post; or a command-in-chief of an army or an overseas station, meaning India and the presidency armies, Ireland, South Africa, the China and American stations, British forces in Canada or a colony, the Army of the Rhine, and the sirdarship of the Egyptian army. Excluded are the home naval ports (Portsmouth, the Nore, Plymouth), home army commands, divisional, brigade, and district commands, commandantships, staff posts, the Naval Lords, the Master-General of the Ordnance, the Under-Secretary for War, the Lord Lieutenant of Ireland, the governorships of hospitals and colleges, and seats in Parliament. Sixty-two commanders held such a post. Standard errors are robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.26: Probated Wealth and Death Timing Relative to Battle

	Probate Wealth at Death (£ thousand, 1900 prices)	
	(1)	(2)
Died within 3 years of last battle	-9.441*	-8.466*
	(5.382)	(5.066)
Died at battle	-10.315*	-8.253
	(6.121)	(6.327)
Died at a lost battle	-15.087***	-13.030*
	(5.529)	(6.667)
Background and Rank Controls	No	Yes
Number of Observations	218	218
Mean of dep. var. (£k, 1900)	20.42	20.42
SD of dep. var. (£k, 1900)	35.37	35.37

Note: Each row is a separate OLS regression of deflated estate at death (£ thousand, 1900 prices) on the named indicator against all remaining commanders, with the sample and controls of Table 7. *Died within 3 years of last battle* marks the 30 commanders who died within three years of the last battle they led, whether or not the death was battle-related. *Died at battle* marks the 24 commanders whose death was a result of a battle (killed in action, or died of wounds or campaign illness while in service), identified from a hand review of the leader biographical notes and verified against published biographies. *Died at a lost battle* marks the 17 of them whose final battle was a British defeat. Standard errors are heteroskedasticity-robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.27: Probated Wealth of Battle Commanders and Other Military Officers

Dep. Var.:	Probate Wealth at Death (£ thousand, 1900 prices)		
	(1)	(2)	(3)
Any battle commander vs. Officers in probate	17.238***	14.773***	15.233***
	(3.413)	(3.372)	(3.391)
Artifact-heavy battle commanders vs. Officers in probate	33.693***	31.767***	31.871***
	(12.332)	(12.180)	(12.218)
Other battle commanders vs. Officers in probate	12.939***	10.318***	10.859***
	(2.706)	(2.689)	(2.702)
Rank-Group-at-Death FE	No	Yes	Yes
Death-Decade FE	No	No	Yes
Number of Observations	13,696	13,696	13,696
Mean of dep. var. (£k, 1900)	7.93	7.93	7.93
SD of dep. var. (£k, 1900)	26.17	26.17	26.17

Note: The unit of observation is a probated military officer: a person whose occupation field in the 1858–1906 calendars records a military rank. The sample stacks the 140 matched battle commanders who fall inside these calendars against *Officers in probate*, the 13,556 officers present in probate with no battle command in the battle data; calendar records matching any battle commander by name and death year are excluded, so the two groups are disjoint. Each row reports the difference in mean deflated estate (£ thousand, 1900 prices) between the named group and *Officers in probate*: the first row from a regression on a binary battle-command indicator, the second and third from a single regression on the three-group indicator distinguishing *Artifact-heavy battle commanders*, who led at least one artifact-heavy battle on the 20-year window, from *Other battle commanders*, who led only artifact-scarce battles. Column (1) includes no fixed effects; column (2) adds rank-group-at-death fixed effects; column (3) adds death-decade fixed effects. Standard errors are heteroskedasticity-robust. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.28: Indian Mutiny Difference-in-Differences: Officer-Career Events

	Gazetted Officer-Career Events per Regiment-Year			
	(1) All purchase events	(2) Promotions by purchase	(3) First commissions purchased	(4) Within-regiment promotions
Panel A: Mutiny-only regiments vs. no-substantial-combat controls (strict)				
Treated × Post (1859–68)	1.850**	1.053**	0.797**	1.104**
	(0.829)	(0.475)	(0.379)	(0.476)
Number of Observations	1,176	1,176	1,176	1,176
Mean of dep. var.	5.913	3.556	2.357	3.465
SD of dep. var.	4.854	3.155	2.063	3.106
Mean of dep. var. (treated, pre-1859)	4.098	2.505	1.593	2.389
Panel B: All Mutiny regiments vs. all other purchasable regiments (broad)				
Treated × Post (1859–68)	1.001*	0.634*	0.367	0.650*
	(0.589)	(0.343)	(0.263)	(0.348)
Number of Observations	2,667	2,667	2,667	2,667
Mean of dep. var.	5.961	3.574	2.387	3.494
SD of dep. var.	4.653	3.065	1.979	3.018
Mean of dep. var. (treated, pre-1859)	4.569	2.763	1.806	2.670
Regiment FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Note: The unit of observation is an HM regiment-year over 1848–1868; no years are dropped, so the 1857–58 campaign years fall in the conservative pre-period. Each column is a separate difference-in-differences regression in which the dependent variable is the annual count of the named London Gazette officer-career event. *Treated* × *Post* interacts the treated regiments with the post-campaign window (1859–1868). Panel A uses the strict design: the 25 regiments whose principal campaign was the Mutiny, against the 31 control regiments credited with no substantial combat anywhere over 1848–1870. Panel B uses the broad comparison: all 38 regiments with substantial Mutiny service, including Crimean War veterans, against all other purchasable regiments (Appendix B.19 details both classifications). *All purchase events* pools by-purchase promotions and first-commission purchases; *within-regiment promotions* counts by-purchase promotions filled from inside the same regiment, excluding first commissions. All columns include regiment and year fixed effects, and standard errors clustered by regiment are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.29: Indian Mutiny Difference-in-Differences: Robustness

	All Purchase Events per Regiment-Year		
Panel A: Alternative comparison sets			
	(1) All Mutiny vs. other fighters	(2) Mutiny-only vs. other fighters	(3) Mutiny-only vs. no Crimea/Beijing
Treated × Post (1859–68)	1.371**	2.675***	1.685**
	(0.598)	(0.669)	(0.775)
Number of Observations	2,121	1,848	1,449
Mean of dep. var.	5.873	5.970	5.955
SD of dep. var.	4.598	4.631	4.808
Panel B: Alternative estimators			
	(1) OLS	(2) Poisson	(3) Inverse hyperbolic sine
Treated × Post (1859–68)	1.850**	0.355***	0.403***
	(0.829)	(0.128)	(0.148)
Number of Observations	1,176	1,176	1,176
Mean of dep. var.	5.913	5.913	2.121
SD of dep. var.	4.854	4.854	0.957
Panel C: Outcome and inference			
	(1) Winsorized at the 99th percentile	(2) Purchases per 100 pre-campaign officer events	(3) Wild cluster bootstrap
Treated × Post (1859–68)	1.750**	8.416**	1.850**
	(0.800)	(3.974)	–
p-value	0.033	0.039	0.031
Number of Observations	1,176	1,176	1,176
Number of Regiments	56	56	56
Panel D: Sample composition			
	(1) Cavalry excluded	(2) 6th Dragoon Guards and 72nd Foot excluded	(3) 94th Foot and West India regiments excluded
Treated × Post (1859–68)	2.033**	1.961**	1.696*
	(1.004)	(0.856)	(0.884)
Number of Observations	924	1,134	1,092
Number of Regiments	44	54	52
Regiment FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes

Note: The unit of observation is an HM regiment-year over 1848–1868 and the dependent variable is the annual count of all commission-purchase events, with the post period opening in 1859, regiment and year fixed effects, and standard errors clustered by regiment in parentheses. Panel A varies the comparison set, following Figure A.29: column 1 compares all 38 regiments with substantial Mutiny service against the 63 other purchasable regiments credited with a battle anywhere in the period, column 2 restricts the treated side to the 25 regiments whose principal campaign was the Mutiny against the same comparison group, and column 3 compares the same 25 regiments against the 44 purchasable regiments with no exposure to the Crimean War or the 1860 Beijing campaign, the period's two other artifact-heavy campaigns. Panels B to D use the strict design of Section 5.2, the 25 Mutiny regiments against the 31 purchasable regiments credited with no substantial combat over 1848–1870. Panel B varies the estimator: column 1 is the baseline OLS in levels, column 2 an equivalent Poisson specification, and column 3 OLS on the inverse hyperbolic sine transformation of the count. Panel C, columns 1 and 2, transform the outcome: winsorized at its 99th percentile, and purchases per 100 of the regiment's own average annual gazetted officer events over 1848–1858. Column 3 reports the baseline estimate with a p-value from a wild cluster bootstrap by regiment with Webb weights and 9,999 replications. Panel D drops the regiments whose place in the design is least certain. Column 1 drops the twelve cavalry regiments, whose commissions carried higher regulation prices than the infantry's and whose smaller officer establishments put their purchase counts on a different scale. Column 2 drops the 6th Dragoon Guards and the 72nd Foot, the two treated regiments whose Crimean service was confined to the last phase of the siege of Sevastopol in 1855, with no field battle, so that it falls just short of the rule that excludes Crimean veterans from the treated group. Column 3 drops the 94th Foot and the 1st, 2nd, and 3rd West India Regiments, four control regiments that saw minor fighting inside the window without a battle honour, against the Mappila risings of 1849 and at Sabbajee in the Gambia in 1853, so that their claim to have fought nothing is the weakest in the control group. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.30: Commission Purchases after the First Afghan War and the Indian Mutiny

	(1) First Afghan War 1839–1842	(2) Indian Mutiny 1857–1858
Difference-in-differences, all purchase events	1.819*	1.850**
	(1.049)	(0.829)
Treated pre-campaign mean	3.92	4.10
Estimate as percent of the pre-campaign mean	46	45
Window	1831–1852	1848–1868
Treated regiments	5	25
Control regiments	67	31
Number of Observations	1,584	1,176
Mean of dep. var.	4.824	5.913
SD of dep. var.	3.782	4.854
Regiment FE	Yes	Yes
Year FE	Yes	Yes

Note: The unit of observation is a purchasable regiment-year and the dependent variable is the annual count of commission purchases (by-purchase promotions plus purchased first commissions), as in Section 5.2. Each column is a separate difference-in-differences regression with regiment and year fixed effects on the audited groups of Appendix B.20: the treated regiments of the named campaign against the purchasable regiments that fought nothing in the window. The window opens eight years before the campaign and closes ten years after its final year; the post period opens the year after the campaign's final year and the campaign years sit in the pre-period. Column 2 re-estimates the strict Mutiny design of Table A.28 on its published panel with the same code. Standard errors in parentheses are clustered by regiment. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.31: Indian Mutiny: Commission Purchases by Channel

	Gazetted Officer-Career Events per Regiment-Year					
	Baseline	Attraction		Cash in hand	Release	
	(1) All purchase events	(2) Exchanges into the regiment	(3) First commissions purchased	(4) Within-regiment promotions by purchase	(5) Retirements and resignations	(6) Purchases into retirement vacancies
Panel A: Mutiny-only regiments vs. no-substantial-combat controls (strict)						
Treated × Post (1859–68)	1.850**	0.457***	0.797**	1.104**	0.613*	0.573*
	(0.829)	(0.166)	(0.379)	(0.476)	(0.364)	(0.306)
Number of Observations	1,176	1,176	1,176	1,176	1,176	1,176
Mean of dep. var.	5.91	1.31	2.36	3.47	2.60	2.23
Mean of dep. var. (treated, pre-1859)	4.10	1.03	1.59	2.39	1.84	1.55
Panel B: All Mutiny regiments vs. all other purchasable regiments (broad)						
Treated × Post (1859–68)	1.001*	0.324**	0.367	0.650*	0.371	0.337
	(0.589)	(0.134)	(0.263)	(0.348)	(0.259)	(0.214)
Number of Observations	2,667	2,667	2,667	2,667	2,667	2,667
Mean of dep. var.	5.96	1.17	2.39	3.49	2.63	2.24
Mean of dep. var. (treated, pre-1859)	4.57	0.97	1.81	2.67	2.06	1.72
Regiment FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Note: The unit of observation is an HM regiment-year over 1848–1868. No years are dropped, so the 1857–58 campaign years fall in the pre-period. Each column is a separate difference-in-differences regression in which the dependent variable is the annual count of the named *London Gazette* officer-career event, with regiment and year fixed effects and standard errors clustered by regiment in parentheses. *Treated* × *Post* interacts the treated regiments with the post-campaign window (1859–1868). Panel A uses the strict design, the 25 regiments whose principal campaign was the Mutiny against the 31 control regiments credited with no substantial combat over 1848–1870. Panel B uses the broad comparison, all 38 regiments with substantial Mutiny service against all other purchasable regiments (Appendix B.19 details both classifications). Column 1 is the baseline count of all purchase events, by-purchase promotions plus purchased first commissions, as in Table A.28. The remaining columns are grouped by the channel whose prediction they test. Columns 2 and 3 count entries from outside: officers arriving by exchange from another regiment, and civilians buying a first commission. Column 4 counts promotions by purchase filled from the regiment's own ladder, the purchases that an incumbent with prize money in hand would make. Columns 5 and 6 concern the vacancies that enriched incumbents created by leaving: retirements and resignations, and purchases into the vacancies that a purchase notice attributes to a retirement ("vice Hull, who retires"). *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.32: British Museum Artifact-Level Variables by Group

Group	Representative fields	Role in the analysis
Identifiers and display	Museum and registration numbers, department, object type, title, image link	Unique object key; deduplication of the scrape
Dates and places	Catalog date and place text, parsed acquisition year, parsed production year	Time index (acquisition year); production screen dropping artifacts made after 1913
Acquisition and ownership	Named parties, acquisition method, previous owners, acquisition and excavation notes	Military-source indicator; the war-related and explicit-loot provenance sets
Geolocation	Coordinates, country, region, city or village, and precision, for find spot and production place	Assignment of each artifact to a city and to a grid cell; precision defines the precise-only sample
Object description	Material, technique, dimensions, inscriptions, culture, condition, exhibition history	Ever-exhibited outcome (exhibition history); the remaining fields describe objects and do not enter the baseline regressions
Associated links	Links to associated people, places, events, and titles	Not used in the baseline regressions

Note: The table groups the 77 artifact-level columns of the scraped British Museum catalog by their role in the analysis; Appendix B.1 describes the scrape and the parsing steps. Representative fields are illustrative rather than exhaustive. Appendix B.2 describes the geolocation fields, and Appendix B.18 the provenance sets built from the acquisition and excavation notes.

Table A.33: Campaign Objects in the Salerooms and in the British Museum

Campaign	Saleroom lots		British Museum objects			
	Sold as campaign objects	Military-titled consignor	Acquired within four years	Of which explicit-loot notes	Acquired 21 or more years later	Median lag (years)
Kerch and Sevastopol, 1855	33	1	462	0	131	2
Delhi, 1857	11	2	0	0	5	23
Lucknow, 1857–58	50	45	0	0	6	33.5
Yuanmingyuan (Beijing), 1860	1,643	491	13	0	843	34
Magdala, 1868	5	1	49	28	3	0
Kumasi, 1874	4	0	122	3	339	22
Benin City, 1897	16	16	302	292	—	1

Note: This table sets the auction record of each case campaign beside the British Museum's own register, one row per campaign. The saleroom columns count lots in the *Art Sales Catalogues Online* corpus, 14.5 million lots in catalogues for sales held from 1750 to 1900 (Section 3.5 and Appendix B.10). *Sold as campaign objects* counts lots whose own printed description, the section heading that governs them, or the sale as a whole states that the object came from the campaign, as judged by language-model readers who read every flagged lot in the context of its catalogue; it excludes lots that merely depict or describe the places. The Yuanmingyuan row includes the four sales devoted entirely to Summer Palace material, counted at the catalogue level (796 lots). *Military-titled consignor* counts lots sold in catalogues whose title page names a consignor with a military title. The Museum columns count artifacts in the main panel located to the campaign's battle city on the nearest-city basis, with windows measured from the battle year: *acquired within four years* covers the battle year and the three years after it. *Explicit-loot notes* counts artifacts whose acquisition or excavation notes record a taking in words such as "loot," "plunder," "captured," or "prize" (Appendix B.18). *Acquired 21 or more years later* runs to 1913 and is undefined for Benin because the panel ends in 1913, and the *median lag* is the median of acquisition year minus battle year across all artifacts acquired at or after the battle. The saleroom counts are lower bounds. The scans hold 46 percent of Christie's London sales, 53 percent of Phillips's, and 20 percent of Foster's.

Table A.34: Stacked Poisson Estimates: All Battle Episodes

	Number of Artifacts Acquired This Year					
	(1)	(2)	(3)	(4)	(5)	(6)
Previous Year Had Any British Battle	2.150***			2.413***		
	(0.534)			(0.605)		
3 Years Before		0.068	0.083		0.481	0.490
		(0.667)	(0.669)		(0.544)	(0.550)
2 Years Before		-0.046	-0.043		0.213	0.195
		(0.793)	(0.792)		(0.611)	(0.614)
Year of Battle		1.656**	1.666**		1.851***	1.919***
		(0.771)	(0.771)		(0.654)	(0.664)
1 Year After		2.694***	2.710***		3.220***	3.248***
		(0.789)	(0.795)		(0.837)	(0.844)
2 Years After		1.573**	1.584**		1.558**	1.557**
		(0.784)	(0.785)		(0.692)	(0.698)
3 Years After		0.606	0.601		1.496**	1.511**
		(0.741)	(0.743)		(0.643)	(0.658)
Design	TWFE	Stacked	Stacked	TWFE	Stacked	Stacked
Control Group	Full panel	Battle-free	Never only	Full panel	Battle-free	Never only
Unit FE	Yes	No	No	Yes	No	No
Year FE	Yes	No	No	Yes	No	No
Unit x Stack FE	No	Yes	Yes	No	Yes	Yes
Year x Stack FE	No	Yes	Yes	No	Yes	Yes
Clean Treated Episodes		201	201		217	217
Number of Observations	198,450	935,935	848,421	213,248	1,006,096	913,724
Mean of dep. var.	0.704	0.697	0.740	0.655	0.638	0.650
Unit of observation	City	City	City	1° Grid	1° Grid	1° Grid

Note: The unit of observation is a city-year (columns 1–3) or a 1°-grid-cell-year (columns 4–6). Columns 1 and 4 reproduce the baseline two-way fixed-effects Poisson estimates of Table 2. The remaining columns estimate the stacked Poisson event study on *every* British battle episode rather than only each unit's first battle, matching the recurring treatment of the main specification: every battle year with no adjacent British battle at the same unit within the six years before or three years after defines a sub-experiment consisting of the seven years centred on the battle, the units cleanly treated in that year, and controls. Episodes with an adjacent battle are excluded because their event windows overlap (the table reports the count of clean episodes). In columns 2 and 5 controls are units with no British battle over the same lookback-and-window range, so units treated in the more distant past may serve as controls once their response has dissipated, in the spirit of the local-projections estimator of Dube et al. (2025); in columns 3 and 6 controls are units that never host a British battle during 1816–1913. The stacked data construction follows Cengiz et al. (2019); their estimator is linear, and estimation here is by Poisson pseudo-maximum likelihood with unit-by-stack and year-by-stack fixed effects. The event-time indicator for the year before the battle is the omitted category, and battle years within three years of the panel edges are excluded. Standard errors are clustered at the admin-1 region level in the city panel and at the grid-cell level in the grid panel, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.35: Stacked Design: Excluding Other European Powers' Battles

	Number of Artifacts Acquired This Year			
	(1) No other British battle	(2) No other British or European battle	(3) No other British battle	(4) No other British or European battle
3 Years Before	0.068	0.070	0.481	0.481
	(0.667)	(0.667)	(0.544)	(0.544)
2 Years Before	-0.046	-0.047	0.213	0.210
	(0.793)	(0.793)	(0.611)	(0.611)
Year of Battle	1.656**	1.657**	1.851***	1.851***
	(0.771)	(0.771)	(0.654)	(0.653)
1 Year After	2.694***	2.694***	3.220***	3.218***
	(0.789)	(0.789)	(0.837)	(0.838)
2 Years After	1.573**	1.573**	1.558**	1.555**
	(0.784)	(0.785)	(0.692)	(0.692)
3 Years After	0.606	0.612	1.496**	1.498**
	(0.741)	(0.741)	(0.643)	(0.643)
Unit of observation	City	City	1° Grid	1° Grid
Estimation	PPML (Stacked)	PPML (Stacked)	PPML (Stacked)	PPML (Stacked)
City or Grid FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
FE × Stack	Yes	Yes	Yes	Yes
Clean Treated Episodes	201	197	217	213
Number of Observations	935,935	927,241	1,006,096	996,905
Mean of dep. var.	0.697	0.693	0.638	0.635
SD of dep. var.	19.496	19.464	18.549	18.518

Note: The unit of observation is a city-year in columns 1–2 and a $1^\circ \times 1^\circ$ grid-cell-year in columns 3–4. Each column reports the stacked Poisson event study of Appendix B.15, which builds a sub-experiment around every British battle whose unit has no other British battle in the six years before or three years after it and compares it to units with no British battle over the same range. Columns 2 and 4 additionally drop, from the treated and the control set alike, any unit with a battle fought by another European power or fought inside Europe in that range; the screen removes four treated episodes and about one percent of the observations in each panel. Estimation is by Poisson pseudo-maximum likelihood with unit-by-stack and year-by-stack fixed effects, as in Appendix B.15. Standard errors are clustered at the state/province level in the city specifications and at the grid-cell level in the grid specifications. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.36: British Battles and Artifact Acquisitions by Recorded Provenance: City and Grid Panels

	Number of Artifacts Acquired This Year				
	(1) Full sample	(2) Military source	(3) War-related	(4) Explicit loot	(5) None of (2)–(4)
Panel A: City					
Previous Year Had Any British Battle	2.150***	2.654***	4.237***	4.693***	2.066***
	(0.534)	(0.973)	(0.462)	(1.132)	(0.638)
Number of Observations	198,450	198,450	198,450	198,450	198,450
Mean of dep. var.	0.704	0.036	0.010	0.002	0.661
SD of dep. var.	18.460	3.139	0.761	0.455	18.154
Panel B: 1° Grid					
Previous Year Had Any British Battle	2.413***	2.719***	4.265***	4.693***	2.431***
	(0.605)	(0.877)	(0.384)	(1.132)	(0.710)
Number of Observations	213,248	213,248	213,248	213,248	213,248
Mean of dep. var.	0.655	0.033	0.009	0.002	0.615
SD of dep. var.	17.778	3.011	0.613	0.439	17.489
City or Grid FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes

Note: The unit of observation is a city-year (top panel) or $1° \times 1°$ grid-cell-year (bottom panel). The estimator is PPML and the treatment is an indicator for a British-involved battle at the same location in the previous year. Column (1) reports the full-sample baseline. Column (2) restricts the dependent variable to artifacts whose recorded source names a military officer, column (3) to artifacts whose acquisition notes are *war-related*, column (4) further to artifacts whose notes *explicitly mention a taking*, and column (5) to artifacts in none of the three sets; the provenance sets are those of Table 6, and Appendix B.18 details their construction. In column (4) both panels retain the same seven locations after the estimator drops units without outcome variation, so the city and grid estimates coincide. Dependent-variable means, SDs and observation counts are computed over the full estimation panel. All columns include unit and year fixed effects. Standard errors are clustered at the state/province (top panel) or grid-cell (bottom panel) level, and *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Table A.37: Battle Honours Benchmark for the Indian Mutiny Regiments

Panel A. Treated regiments (substantial Mutiny service), $N = 25$					
Regiment	Mutiny honour	Agrees	Regiment	Mutiny honour	Agrees
2nd Dragoon Guards	Lucknow	Yes	53rd Foot	Lucknow	Yes
6th Dragoon Guards	Delhi 1857	Yes	60th Foot	Delhi	Yes
7th Hussars	Lucknow	Yes	61st Foot	Delhi 1857	Yes
14th Hussars	Central India	Yes	64th Foot	Lucknow	Yes
9th Lancers	Delhi 1857, Lucknow	Yes	72nd Foot	Central India	Yes
12th Lancers	Central India	Yes	75th Foot	Delhi 1857, Lucknow	Yes
5th Foot	Lucknow	Yes	78th Foot	Lucknow	Yes
8th Foot	Delhi 1857, Lucknow	Yes	80th Foot	Central India	Yes
10th Foot	Lucknow 1858	Yes	82nd Foot	Lucknow	Yes
13th Foot	None	No	83rd Foot	Central India	Yes
32nd Foot	Lucknow	Yes	84th Foot	Lucknow	Yes
37th Foot	None	No	86th Foot	Central India	Yes
52nd Foot	Delhi 1857	Yes			
Panel B. Control regiments (no substantial combat 1848–1870), $N = 31$					
Regiment	Mutiny honour	Agrees	Regiment	Mutiny honour	Agrees
Life Guards	None	Yes	39th Foot	None	Yes
Royal Horse Guards	None	Yes	48th Foot	None	Yes
7th Dragoon Guards	None	Yes	54th Foot	None	Yes
10th Hussars	None	Yes	56th Foot	None	Yes
15th Hussars	None	Yes	58th Foot	None	Yes
16th Lancers	None	Yes	66th Foot	None	Yes
1st West India Regiment	None	Yes	69th Foot	None	Yes
2nd West India Regiment	None	Yes	76th Foot	None	Yes
3rd West India Regiment	None	Yes	81st Foot	None	Yes
11th Foot	None	Yes	85th Foot	None	Yes
15th Foot	None	Yes	87th Foot	None	Yes
16th Foot	None	Yes	89th Foot	None	Yes
22nd Foot	None	Yes	94th Foot	None	Yes
25th Foot	None	Yes	96th Foot	None	Yes
27th Foot	None	Yes	98th Foot	None	Yes
36th Foot	None	Yes			
Treated regiments holding a Mutiny honour: 23 of 25. Control regiments holding none: 31 of 31. Arm and honour agree for 54 of the 56 regiments.					

Note: The unit of observation is a regiment. The table sets the two groups of the strict design of Section 5.2 against the published battle honours record. The Crown granted four honours to British line and cavalry regiments for the 1857–58 campaign: Delhi 1857, Defence of Lucknow, Lucknow, and Central India. Variant spellings are recorded as the sources print them, and the general *India* honour and the Crimean *Sevastopol* honour do not count. Norman (1911) compiles the grants, and I read each regiment's honors from the online regimental honor rolls that reproduce his roll, checked against his lists and the National Army Museum and regimental museum pages where they exist. Where a source prints honours under a regiment's post-1881 title, I map the title back to the pre-1881 number that the Gazette panel keys on. Panel A lists the 25 treated regiments and Panel B the 31 control regiments. The Crown granted honours for successful actions and later added grants that regiments lobbied for, so the absence of an honour is weak evidence that a regiment saw no service.