

# How persistent is armed conflict?\*

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## Abstract

We assess the degree of persistence in armed conflict in particular places over the last two centuries, asking in addition if conflict-ridden places have durable features – social, demographic or geographical – that explain persistence, or whether armed conflict at one time has a causal effect on propensity for armed conflict at later times. For all types of war in the Correlates of War data, we code the territories on which the armed conflict occurred. The data reveal significant levels of persistence in territories that experienced extra-state (imperial and colonial) and non-state wars in an earlier era. Exogenous features such as geography and pre-1800 demography are important in explaining where conflicts persist. However there remains significant persistence controlling for geographic and demographic features. In particular, extra-state wars before 1945 are strongly related to civil war after 1945. This persistence does not appear to arise from the long-run enmity of particular groups that fight repeatedly over centuries. We conjecture that imperial and colonial wars may have been more likely in territories where there were more and/or more developed pre-colonial state structures, and that either the persistence of these structures or changes in them brought about by the violent encounters raised civil war risks after 1945.

## 1 Introduction

Do civil wars *ever* end?

Given that we now have a large literature on how civil wars end and what determines peace duration after a war's end, this may seem like an odd question.<sup>1</sup> And certainly if one uses the

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<sup>1</sup>A few examples, though very far from a thorough list, include Walter (2002), Fortna (2008), Hartzell and Hoddie

coding criteria that scholars working in this area typically use – considering, for example, a war to be terminated if violence ends for some period of time like three months, a year, or two years – then not only do civil wars end, but many “end” repeatedly! For instance, the Correlates of War (COW) project codes six distinct, terminated wars in Angola since 1945, four of whose “ends” are separated from the start of the next war by just over a year, and the fifth by less than five years. Was that six wars, or one long stretch of quite persistent armed conflict?

In this paper we consider what can be learned by asking about how persistent armed conflict has been in particular places over a long period of time, roughly the last two centuries. Economists studying economic growth have found remarkable historical persistence in a variety of measures of political and economic institutions (for a review see Nunn 2009). Is it also the case that certain places are highly conflict prone and have been this way for a long time? If this is the case, is it because they have durable features, social or geographical, that have favored armed conflict for at least the last 200 years, or is it that armed conflict at one time has a causal effect on propensity for armed conflict at later times?<sup>2</sup>

Up to (non-trivial) limits of existing conflict data and some additions we have made to them, we are able to answer the first, descriptive question fairly well. There is indeed a moderate amount of historical persistence in armed conflict through time. We use the most recent update of the Correlates of War (COW) war lists, which cover the period from 1816 to 2007.<sup>3</sup> We ask how does fighting in all or certain kinds of armed conflict before 1945 (or in robustness checks, the larger of 1945 and year of independence) correlate with fighting on the same territory after 1945. The types of COW conflicts considered are inter-, intra-, extra-, and non-state wars.<sup>4</sup> We use as our geo-

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(2007), Kreutz (2010), Licklider (1995), DeRouen and Bercovitch (2008), Balch-Lindsay and Enterline (2000), and Fearon (2004).

<sup>2</sup>DeRouen and Bercovitch (2008) note that many post-1945 conflicts are highly persistent.

<sup>3</sup>See Sarkees and Wayman (2010), although we use updates from December 2011 posted at <http://www.correlatesofwar.org/>.

<sup>4</sup>These are all defined relative to COW’s coding of official “interstate system members.” An interstate war is a war between two such states. An extrastate war is a war between one member state and some entity with organized forces that is not a recognized system member. An intrastate war is a civil war within a system member, and a non-state war

graphical units present-day state boundaries, for theoretical and practical reasons discussed below. We coded the 653 unique COW wars of all types for where the fighting took place, identifying 789 current country locales for fighting in the 653 conflicts.

We find that doubling the number of war years prior to 1945 (the median is 3 and the mean is 7) associates on average with about a one-third increase in years of conflict within the same boundaries after 1945. The raw correlation of logged pre-45 war years with logged post-45 war years is .38, rising slightly to .42 if interstate wars are omitted.<sup>5</sup>

Further, we find no evidence that experience with interstate war or intrastate war before 1945 predicts post-1945 war experience. However, years of extrastate war before 1945 – that is, colonial and imperial war – is a strong predictor of war years after 1945 (which is mainly civil war). These relationships are strengthened when one considers only non-Western countries.

On our second set of questions about the reasons for historical persistence – how much is it that durable factors make particular locales conflict prone, versus how much does armed conflict cause either more or less conflict in later periods – we make less progress. This is not surprising, given that we can't conduct experiments and there are no obvious natural experiments that involve random assignment of pre-1945 conflict levels. But we can identify durable factors that plausibly cause conflict (or peace) before and after 1945, and see how controlling for these factors affects the correlation between conflict before and after 1945.

Here we find that the correlation between pre-45 and post-45 conflict diminishes significantly, though it is not eliminated, when one controls for population estimates for the 1500s, and/or the degree of mountainousness of the territory. These are both factors that may favor armed conflict

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is a war between two non-system member political entities. COW defines system membership as follows (from the website): “Prior to 1920, the entity must have had a population greater than 500,000 and have had diplomatic missions at or above the rank of chargé d'affaires with Britain and France. After 1920, the entity must be a member of the League of Nations or the United Nations, or have a population greater than 500,000 and receive diplomatic missions from two major powers.”

<sup>5</sup>Because total war years is highly skewed – many countries have zero, and a few have dozens or more – we add one and log our war years measures throughout the paper. Although it is not very natural to treat total war years as a count variable, doing so and using negative binomial regressions tends to strengthen the results reported here.

or be correlated with omitted variables favoring conflict, in both periods.<sup>6</sup> The relationship is not much affected by controlling for a measure of ethnic diversity at the start of the colonial period, which is unrelated to conflict before 1945 (controlling for population) and positively related after.<sup>7</sup>

Our conjecture is that inter- and intrastate war before 1945 can be a sign of state building in progress (that would reduce the probability of persistence), or of factors such as the construction of historical grievances (that would dispose a country to continued conflict). Thus the net correlation with post-1945 conflict comes to nothing. By contrast, colonial/imperial and non-state wars before 1945 may indicate either (a) the existence of a plethora of precolonial authorities and structures that make for greater divisions and conflict among groups within post-colonial boundaries, or (b) the destruction of such authorities and structures by the colonizers, making post-colonial state-building more difficult. In both cases, the net correlation with post-1945 conflict would be positive.

On this conjecture, consider the difference between Latin America and Africa. We count for each country whether it has experienced above or below the median number of war years for each of the two eras we are comparing. For the 33 Latin America/Caribbean countries, five of them had above the median in the first era with below the median in the second. These include Haiti, Mexico, Venezuela, Brazil, and Uruguay. None had the reverse experience. Seventy-four percent were above the world median in the earlier era; none of those 74% were above the median in war years post 1944. We suggest that the inter- and intra-state wars in the 19th century in Latin America and the Caribbean had state-building effects that on balance reduced their susceptibility to subsequent civil wars.

Meanwhile, for the 49 African countries, while five moved from above median in the first era to below median in the second, seventeen territories were below the median in the first era

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<sup>6</sup>As discussed below, population may be mechanically related to war years via the threshold of 1000 total killed necessary for entry into the COW data set. We have considered the main models dropping small countries; results change very little.

<sup>7</sup>As in many, though not all, studies of civil war onset, the relationship between post-1945 measures of ethnic fractionalization and total civil war years weakens considerably when one controls for per capita income. As discussed below, we are hesitant to control for post 1945 income in this project because over this long period of time (two centuries), it is plausible that prior conflict has a significant impact on later income.

and above in the second. Indeed, 68% of the African countries were above the world median in war years post 1944. Here we suggest that the pre-1945 extra-state (imperial wars of conquest and colonial wars) and nonstate wars are a sign of no state history and/or lack of strong traditional authority structures commensurate with state boundaries. These wars may have been, in contrast to those in Latin America, state-destroying. One implication of this difference, if we are correct, is that the “give war a chance” school of thought has not sufficiently considered the types of war that enhance state authority and those that undermine it.

The paper proceeds as follows. In section 2, we show that there is persistence across centuries and provide descriptive statistics by country, by region, and by type of war. In section 3, our data analysis suggests that while exogenous sources of persistence (i.e. those from durable factors such as geography and demography) are significant, there remains variance to be explained, which is consistent with though not conclusive of prior conflict causing later conflict. In section 4, we analyze 19th century wars by type, and suggest reasons why territories that experienced intra-state or interstate wars in the earlier era were less likely to experience persistence than territories that experienced extra-state or non-state wars in the earlier era. In section 5, now relying on case materials, we suggest that in countries with the highest rates of persistence – i.e. those most likely to have permanent enemies – there is little evidence that the groups at war with each other were the same across our two eras. Though this is just a preliminary observation, it casts some doubt on the proposition that a great deal of the persistence we find is due to long-term enemies. In section 6, we address issues of the external validity of the COW data, with a proposal for reform. Section 7 concludes.

Before proceeding, we should explain why we use present-day independent states as our territorial units. First, we need *some* fixed territorial spaces in order to answer the question “how persistent is armed conflict over time in particular areas?” Second, it is a fact that present-day state boundaries overwhelmingly follow the internal administrative boundaries of prior empires and kingdoms (Carter and Goemans 2011). As a result, even when they gained formal independence after 1945, present-day states almost always have had a longer-term existence as administrative

units governed by common arrangements and a single main authority. This makes present day state boundaries a natural unit of analysis for this exercise.<sup>8</sup>

The most compelling alternative would be to divide the earth's land into a grid and code each element for the existence and type of armed conflict in each year since 1815.<sup>9</sup> While this approach could have some benefits – for instance, one could more easily ask about the relationship between certain terrain features, or the presence of cities, and conflict over time – it has practical and theoretical drawbacks as well. For one, accurately identifying the specific locations of fighting and battles for pre-1945 conflicts would be an extremely difficult task. Second, the finer the grid chosen, the lower the over-time persistence of conflict in particular cells, implying that one would need to develop parametric assumptions about proximity to get a meaningful measure of persistence. Third, since most organized violence in the last two centuries has itself been organized as contests for control of territory usually delimited by state or administrative lines, one would need to reintroduce borders somehow into the grid analysis in any event. Finally, while still difficult, it is much easier to get data on attributes of present-day state territories into the past than it is to get data on arbitrary grid cells.

## **2 Persistence of armed conflict, 1816-2007**

For each of the four types of COW wars we coded principal locales of fighting, using present-day independent states as the territories to which to assign wars. For example, COW codes the “Second Italo-Ethiopian Expedition” from 1895 to 1896. In this and many other cases, Wikipedia entries are sufficient to identify major places of battle – here, present-day Eritrea and Ethiopia. In other cases, we consulted case-specific secondary literatures.<sup>10</sup>

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<sup>8</sup>Wimmer and Min (2006, 2009) were the first (so far as we know) to develop a territory-year data set using current states as the territorial units. They are interested in the relationship between changing principles of political legitimacy and civil war, and do not address questions about persistence.

<sup>9</sup>Besley and Reynal-Querol (2012) attempt to do this exercise for subSaharan Africa using a historian's list of 91 precolonial conflicts. See also Michalopoulos (2012).

<sup>10</sup>Particularly for a few interstate wars, questions about whether there was “enough” fighting in a territory to merit inclusion sometimes arose. We required evidence of a significant battle, or sustained guerrilla or other local armed

COW's category "extrastate" war comprises what are often called colonial and imperial wars (mainly), while the category "intrastate" covers what are usually called civil wars.<sup>11</sup> COW's "non-state" wars are a heterogeneous lot, as this includes not only large scale "communal conflict" but also some cases that seem intuitively like interstate or extrastate war except for the fact that the political units in question do not qualify under COW's formal system membership criteria.

We find that extrastate wars occur overwhelmingly within the territory of a single present-day country (93%), and intrastate wars are even more strongly confined to current country borders (98%). For interstate wars, 57% are fought in the bounds of a single current state, and 34% in just two states. 76% of the nonstate wars occurred in a single current locale, and almost all the rest in two locales.

Figure 1 shows the amount of each different type of war before and after 1945, broken down by major world regions. Not surprisingly, colonial and imperial wars by state members against non-recognized polities drop off dramatically after 1945. Interstate war also falls sharply except in Asia and in subSaharan Africa where there is little in either period. Civil war declines dramatically in the West and in Latin America, and somewhat in Eastern Europe and the former Soviet Union. It increases dramatically, however, in Africa, and also quite a bit in Asia. Nonstate war (again, something of a grab bag) generally declines; note especially the large decline in Latin America which is the result of many essentially inter-state wars here being coded as "nonstate."

From Figure 1 we can already see that high persistence is unlikely within region and war type, except possibly for inter- and intra-state war in Asia and North Africa/Middle East. Low persistence of extra- and inter-state war before and after 1945 is of course related to a change in the international system. World War II and "extra-state war" in the form of some violent anti-colonial movements greatly weakened the major colonial powers, leading them to grant independence to

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opposition in a locale. (A death threshold criterion might be more satisfactory, but this is not implementable for a great many pre 1945 conflicts.)

<sup>11</sup>By an "imperial war" we mean a war intended to expand the territorial control of an imperial power. A "colonial war" is a war subsequent to acquisition of imperial control between forces of the metropole and indigenous forces. The distinction is not perfectly clean, but it is useful.

their Asian and African possessions. In addition, both new superpowers supported independence, and fell into a cold, nuclear peace that arguably contributed to a freezing of interstate borders and a major decline in interstate conflict.

Figure 1 does not allow us to assess persistence of all forms of conflict in particular locales, and more specifically whether extra-state conflict before 1945 is associated with intra-state war after 1945, when the former colonies become independent. So we consider Figure 2, which shows a scatterplot and regression line for total war years after 1945 against total war years before 1945, on a log scale.<sup>12</sup> Points have had a small amount of random noise added to their placement so that it is easier to see the size of the mass at (0, 0). Figure 3 is the same but broken down by region, and dropping countries with less than 500,000 population in 2000 in order to make the (0, 0) clusters more visible. (We also drop the outlier China to make the graphs in Figure 3 more readable.)

Both figures suggest a moderate amount of persistence of armed conflict within present-day state boundaries over the last two centuries. A fairly large set of countries in our Asia, Africa, and North Africa/Middle East regions had multiple years of armed conflict both before and after 1945: for example, Philippines, Indonesia, China, Myanmar, Afghanistan, Vietnam and Pakistan in Asia; Sudan, Angola, Ethiopia, and Chad in subSaharan Africa; and Algeria, Morocco, Iran, Iraq, and Turkey in North Africa/Middle East. At the same time there is a large cluster of present-day countries – 60, to be precise – that, by COW’s and our codings, saw no conflict years either before or after 1945. Most of these countries are small in terms of both land area and current population, as seen in Table 1. We will control for both measures of size in the analysis in the next section.

### **3 Determinants of conflict before and after 1945**

Why might particular territories be persistently conflict prone? We can distinguish between two classes of reasons for conflict persistence, which we will call “exogenous” and “endogenous.” Regarding exogenous reasons, a locale might be conflict prone due to durable features of its social

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<sup>12</sup>We add 1 before logging to include the zero conflict cases. The figure is very similar if instead we compare war years before the later of 1945 and independence, and war years after 1945 or independence.



Table 1: Average land area and current population of countries by pre/post war status

	Avg. land area (1000s of hectares)		Avg. 2000 population (1000s)	
	no post45 wars	> 0 post45 wars	no post45 wars	> 0 post45 wars
no pre45 wars	25,635	15,660	2,173	15,424
n	60	19	60	16
> 0 pre45 wars	98,650	88,890	29,387	59,870
n	45	76	42	73

n's can differ due to missing data on land area or population.

or geographical terrain. In this case it is not that conflict is itself associated with processes that produce more armed conflict later, but that the territory is in a bad neighborhood or is populated by people who for some reason are persistently conflict prone. Perhaps the people in the locale have particularly warlike cultures, or perhaps they lack political and social institutions that foster economic growth and/or political stability. Perhaps it is relatively mountainous, which gives rebel groups better prospects, whether in the 19th century or later. Perhaps it is simply larger in land area or population. These factors might increase the propensity for conflict either mechanically – because COW wars are defined with a death threshold of 1000 killed, for instance – or because large land area or population within a single administrative unit provides military advantages to nascent rebel groups.<sup>13</sup>

Regarding endogenous reasons for persistence, it could be that conflict before 1945 itself causes animosities, hostile group identities, or degraded political and social institutions – all of which might contribute to increased conflict in later periods.<sup>14</sup> It should be stressed, however, that there are also reasons to think that the causal effect of prior conflict on later conflict could

<sup>13</sup>For the period since 1945, there is a strong cross-national relationship between population size and civil war onset, even as population growth is largely unrelated to conflict. Fearon and Laitin (2003) suggest that large population is a predictor of civil war onset because large population in an administrative area “makes it necessary for the center to multiply layers of agents to keep tabs on who is doing what at the local level and, also, increases the number of potential recruits to an insurgency for a given level of income.”

<sup>14</sup>Collier et al. (2003) argue that since 1960, many low income countries have been stuck in a “conflict trap,” which they hypothesize results from endogenous effects of conflict. Along somewhat similar lines, Nunn (2008) reports evidence that subSaharan countries that experienced more slave raiding in the distant past have lower income levels today, and Nunn and Wantchekon (2011) show that members of subSaharan ethnic groups that were more subject to slave raiding in the distant past are today less trusting of others.

sometimes go in the opposite direction: more conflict “before,” less conflict later. For example, Charles Tilly’s (1975) famous aphorism “War made the state and the state made war” summarizes a theory holding that armed conflict is integral to building an effective and capable state apparatus, which arguably makes future civil war less likely (Fearon and Laitin 2003).

Suppose, contrary to reality, that we could randomly assign armed conflict to different territories prior to 1945. This would be the only way we could confidently estimate the causal impact of prior conflict on post-45 conflict, that is, what we have called the endogenous effect of prior conflict on later conflict.<sup>15</sup> Failing this, the traditional strategy is to try to control for exogenous causes of persistence, and hope that the coefficient estimate on pre-45 conflict that remains is a good estimate of the endogenous effect of pre-45 conflict on post-45 conflict. Unfortunately, it is implausible that anyone can identify and reliably measure all the exogenous determinants of conflict, so we can’t be confident that this approach would be giving us a consistent estimate of the causal impact of prior conflict on later conflict.<sup>16</sup>

Nonetheless, it is still of interest to examine how the correlation between pre-45 and post-45 conflict changes as we control for measurable exogenous influences on conflict. If it is easily made to disappear, this could suggest that the endogenous effects of conflict on persistence cannot be very powerful.

We begin in Table 2 by introducing measures for total land area of the territory, and a measure of rough terrain drawn from Nunn and Puga (2012).<sup>17</sup> These are the most clearly exogenous factors we consider, since conflict has no appreciable effect on terrain and no effect at all, by definition,

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<sup>15</sup>Even this is too confident, as it isn’t clear what it would mean to randomly assign armed conflict to a place. Perhaps some element of whether a conflict occurs depends on personalities of the leaders involved, which have essentially random elements, and perhaps we could imagine, in principle, manipulating these.

<sup>16</sup>For subSaharan Africa, it might be argued that arbitrary state boundaries randomly assigned some 19th century conflict propensities, and this variation might be used to identify a long run conflict effect. We are considering this possibility in work in progress. For somewhat similar identification strategies, see Michalopoulos and Papaioannou (2011) and Schultz and Lee (2011).

<sup>17</sup>Other measures, such as logged percent mountainous from Fearon and Laitin (2003), behave very similarly. The Nunn and Puga measure has the advantage of existing for more countries.

on the land area of our units.<sup>18</sup> We show models both with and without region fixed effects.

Larger land area and rougher terrain are both significantly associated with post-45 conflict, and with pre-1945 conflict as well (not shown). Including either of these by itself reduces the estimated coefficient for log of pre-1945 war years, although as seen in Model 5 rough terrain has little additional effect once land area is in the model. Even so, pre-1945 war years remains significantly correlated with post-45 conflict. The “variance explained” by pre-45 conflict is larger than that for land area or terrain, for example.

It is interesting that the persistence correlation is markedly stronger when region dummies are included. This means that within regions, there has been a tendency for the countries with more conflict before 1945 to be the countries with more conflict after 1945 (see again Figure 3). But across regions, the tendency has been for high conflict regions before 1945 to have less conflict after 1945, and vice versa (this pattern is visible in Figure 2, looking at countries in the West, Latin America, or Africa). It is not clear that controlling for region gets us closer to an estimate of a causal effect of pre-45 conflict, because it could be that the absence of persistence observed across regions is partly due to endogenous causes – for example, war causing (or correlating with) state building in Latin America and the West, war contributing to weak post-colonial states in Asia and Africa. It is relevant, though, that land area and rough terrain correlate with conflict in both periods even when one controls for region.

In Table 3 we introduce measures of population and ethnic fractionalization (call it ELF) in the territory. Of course the best existing measures for both are for recent years, which creates a problem: past conflict, and determinants of past conflict, could plausibly influence both current population and current ELF. Regarding ELF, past conflict may reduce ELF by “ethnic cleansing” or because conflict causes state-building which causes gradual homogenization, as occurred in

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<sup>18</sup>One might be worried that the size of the units is endogenous because prior conflict can influence the nature and extent of currently existing independent states. This is certainly true, but recall that we are measuring past conflict only within the bounds of the present day territory. Thus conflict in a larger (or smaller) unit in the past is not attributed to the territory unless it actually occurred within the current boundaries. It is just as if we selected for our fixed “grid” not rectangles but the shapes of current countries.

Table 2: Persistence of all COW conflict, controlling for land area and terrain

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
pre-45 war years <sup>a</sup>	0.366*** (0.000)	0.438*** (0.000)	0.203** (0.009)	0.306*** (0.000)	0.191* (0.015)	0.296*** (0.000)
land area <sup>a</sup>			0.126*** (0.001)	0.094** (0.006)	0.123*** (0.001)	0.089* (0.011)
rugged terrain <sup>a</sup>					0.094 (0.106)	0.105* (0.044)
constant	0.474*** (0.000)	0.922*** (0.000)	-0.445 (0.116)	0.303 (0.282)	-0.372 (0.198)	0.384 (0.178)
region fixed effects?	<i>N</i>	<i>Y</i>	<i>N</i>	<i>Y</i>	<i>N</i>	<i>Y</i>
<i>N</i>	200	200	200	200	197	197
adj. <i>R</i> <sup>2</sup>	0.140	0.330	0.188	0.353	0.195	0.364

DV is logged post-45 war years; *p* values in parentheses; <sup>a</sup> logged

† significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

many European states over the last 200 years and arguably in Latin America as well. Regarding population, past conflict might either cause lower current population by causing more conflict and thus less growth, or higher current population if it is a cause of successful state construction. By including current measures for these variables, then, we would not be estimating either the total effect of pre-1945 conflict or the effect of population and ELF on post-1945 conflict.<sup>19</sup>

As a partial fix we use less reliable but more clearly pre-determined measures: an estimate of population in the 1500s from Acemoglu, Johnson and Robinson (2002) and an estimate of precolonial ethnic diversity based on work in Laitin, Moortgat and Robinson (2012). Acemoglu et al. (2002) provide estimates of population density for 181 countries, 164 of which match to countries in our data. We multiply these by land area to get a population estimate for the 1500s, well before the colonial period in most of the world and at the start of the independent period in the western hemisphere. Laitin et al. (2012) used Ethnologue (Lewis 2009) to estimate the number of all living and dead languages in present-day countries; we use this (logged) as a measure of total ethnolinguistic diversity prior to, or at the dawn of, colonization. We have this variable for only

<sup>19</sup>All these and related considerations are potentially issues for analyses of determinants of civil war based on purely post-1945 data. We expect, however, that they are usually much less problematic because of the shorter time horizons involved – for example, ELF changes slowly for the most part.

144 countries.

Including the population measure reduces the coefficient on pre-1945 conflict by 40 to 50%, but it remains statistically significant (and implies that a doubling of pre-45 war years associates with 15 to 20% increase in post-45 war years). Controlling additionally for linguistic diversity and rough terrain reduces the magnitude and significance of the population variable (as well as that of pre-1945 conflict), but it should be noted that these covariates are all positively correlated at non-trivial levels, so multicollinearity is an issue.<sup>20</sup> As noted above, larger population is a somewhat durable feature of a territory that may favor armed conflict in part because “war” requires at least 1000 killed here, or more substantively because population size in an administrative area has military and political scale effects (Fearon and Laitin 2003).<sup>21</sup>

Controlling for preexisting ethnic diversity also reduces the relationship between pre-45 conflict and post-45 conflict, though again there remains a persistence effect (compare Model 3, Table 3, to Model 1, Table 2). Ethnic diversity in a territory might favor conflict either because it indicates more social divisions and structures that can provide a basis for organizing conflict, or because it is associated with lower income and less developed state structures.<sup>22</sup>

It is worth noting that if we use the standard, circa 1960 measure of ethnic fractionalization (ELF based on the Soviet ethnographic atlas) in these models, then ELF is strongly related to post-45 conflict but its inclusion has almost no impact on the persistence coefficient. The reason is that our measure of pre-existing ethnic diversity correctly picks up that Latin America and the West were considerably more ethnolinguistically diverse in the 19th century than they became by the second half of the 20th century. Thus the measure of preexisting diversity is more related to

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<sup>20</sup>We drop land area from Models 5 and 6 in Table 3 because it is so strongly correlated with the population and language variables. Results are little different, except for bigger standard errors, if it is included.

<sup>21</sup>Since population still matters when one drops countries below 500,000 or even 1 million, we suspect the relationship cannot be purely due to the threshold issue.

<sup>22</sup>In studies of civil war onset restricted to the post-1945 period, the coefficients for ethnic diversity typically diminish or disappear when one controls for per capita income, which suggests that either the bivariate relationship is spurious or that ethnic diversity increases civil war risk by causing weaker and/or poorer states (Fearon and Laitin 2003). We do not control for post-45 income levels here because it is clearly not predetermined with respect to prior war experience.

conflict before and after 1945, since there was a lot of conflict in pre-1945 Latin America and a lot in still-diverse subSaharan Africa, before and after 1945.<sup>23</sup>

Table 3: Persistence of all COW conflict, controlling for population and linguistic diversity

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
pre-45 war years <sup>a</sup>	0.205*	0.269***	0.213*	0.321***	0.111	0.206*
	(0.015)	(0.001)	(0.012)	(0.000)	(0.237)	(0.031)
pop in 1500s <sup>a</sup>	0.123**	0.079†			0.075	0.076
	(0.003)	(0.058)			(0.179)	(0.161)
# langs <sup>a</sup>			0.171*	0.078	0.168*	0.064
			(0.013)	(0.278)	(0.028)	(0.429)
rough terrain <sup>a</sup>					0.194†	0.174†
					(0.052)	(0.051)
constant	-0.544	0.818†	0.372†	1.313***	-0.259	0.750
	(0.167)	(0.096)	(0.098)	(0.000)	(0.640)	(0.227)
region fixed effects?	<i>N</i>	<i>Y</i>	<i>N</i>	<i>Y</i>	<i>N</i>	<i>Y</i>
<i>N</i>	161	161	144	144	136	136
adj. <i>R</i> <sup>2</sup>	0.151	0.363	0.091	0.299	0.118	0.317

DV is logged post-45 war years; *p* values in parentheses; <sup>a</sup>logged

† significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

## 4 Types of conflict before 1945 and armed conflict after

So far we have pooled all types of COW armed conflicts – extra-, intra-, inter-, and nonstate – when asking whether conflict before 1945 predicts more conflict after 1945. In this section we ask if particular types of pre-1945 conflict predict subsequent conflict. Since two thirds of post-1945 COW conflicts are classified as intrastate (i.e., civil) wars, this is close to asking how different types of conflict on a territory before 1945 relate to civil war incidence on the territory after 1945.<sup>24</sup>

Table 4 shows that having experienced more extrastate war (imperial or colonial war) before 1945 is fairly strongly related to having more armed conflict after. The  $R^2$  for the bivariate regres-

<sup>23</sup>It is not clear, however, how much to credit a durable impact of ELF on conflict here, since although Latin American countries were indeed more ethnically diverse in the 19th century, it is hard to argue that most 19th century Latin American wars were caused in some way by ethnic diversity. With few exceptions it was mainly liberal and conservative creole elites fighting with each other.

<sup>24</sup>The breakdown of types of conflict by period is as follows. Notice that the share of intrastate wars after 1945 is approximately equal to the sum of intra- and extra-state wars before 1945.

sion is .25. The relationship holds up controlling for region fixed effects, population, and rough terrain, though including all these as controls together diminishes the magnitude. Nonstate wars, which are less easily characterized, also show a significant relationship to post-1945 conflict.

By contrast, there is not much evidence that a territory that experiences either civil war or interstate war pre-1945 is for that reason more conflict prone afterwards. Within regions there is some persistence of these two types of conflict (second column), but controlling for population or terrain completely eliminates this (fourth column).

All these results change very little – the coefficients move slightly towards zero – if we consider just intrastate war years after 1945 as the dependent variable instead of all war types.

Table 4: Coefficients for types of pre-45 war

war type	regression coefficient on pre45 war years			
extra	0.665***	0.569***	0.512***	0.309**
inter	0.057	0.248*	-0.147	0.009
intra	0.086	0.219*	-0.167	-0.062
non	0.415***	0.477***	0.284*	0.250*
controls	none	region FEs	pop, terrain	pop, terrain, FEs

† significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

The fairly strong relationship between pre-45 extrastate war and post-45 civil war is interesting and deserves more scrutiny. Figure 4 plots the relationship by region.<sup>25</sup> It is clear that the relationship is due to the pattern holding in Asia and subSaharan Africa – where most colonial and imperial wars of the 19th century took place – and to a lesser degree in North Africa/Middle East.

Why might this be the case? Above we conjectured that colonial or imperial war on a territory could indicate that relatively strong traditional authorities inhabited the space, with greater

war type	% pre-45	% post-45
extra	30	9
inter	23	22
intra	33	66
non	14	3
	100	100

<sup>25</sup>Countries with current population less than 500,000 are dropped, so there is some “control” for territory size built in.

capacity for armed resistance to the European colonizers. The destruction of these institutions might have favored conflict after independence. Alternatively, the persistence of these institutions within a larger post-colonial state might have created bases for “dual sovereignty” and conflict with other groups over state control.

Another possibility is that colonial and imperial war are correlated with the presence of particularly war-like groups in a territory. Or the “war-like” propensities might be on the colonizers’ side: perhaps we find colonial and imperial war where for some reason the colonizer had particular reasons to be harsh, and harsh policies created a legacy of violence.

We don’t have the means or the space to assess these hypotheses in this paper. We note, though, that cases in the subSaharan panel of Figure 4 seem loosely consistent with the idea that extrastate war was more common where there were relatively developed and strong precolonial rulers and political systems. This characterization would seem to fit Sudan (various Sultanates), Ethiopia (emperors), South Africa (Zulu kingdom), Nigeria (a powerful empire in the south, Sokoto and Kano in the north), Mozambique (Giza empire), and perhaps Chad. Compare these to some of the subSaharan cases that saw little extrastate war and little civil war after independence: Malawi, Botswana, Zambia, Cameroon, Gabon, and Niger. In none of these did the imperial powers encounter large kingdoms, and they are have all been relatively calm post-independence.

There are some cases that don’t fit the pattern as well. There are territories that had strong precolonial authorities but had no extrastate war pre-1945 and significant conflict post-1945; these include Uganda, Rwanda, Burundi, and Burkina Faso. And there are a few cases of territories that did not have strong precolonial structures but did have significant post-colonial civil war: Liberia, Zimbabwe, and Ivory Coast.<sup>26</sup>

Looking at the Asia panel of Figure 4, we note that most of the territories in the region had strong and developed precolonial political structures. Here, a possible difference between the high pre/high post and the low pre/low post territories is that the former are often large areas that included multiple relatively strong precolonial political systems, whereas the latter are sometimes

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<sup>26</sup>Interesting that two of these were settler colonies and the conflicts were closely related to this legacy.



territories where one or a small number of kingdoms held sway much of the time. For example, compare India, Philippines, Indonesia, Pakistan, and Afghanistan (arguably) to Bangladesh, Bhutan, Japan, and Korea. Again the theory does not work perfectly: For example, Malaysia had multiple sultanates, and is quite spread out, but has had no post-independence COW-level conflict.

As a sort of robustness check for the observation that pre-45 extrastate war shows a relatively strong relationship with post-45 civil war, we report the results of adding total pre-45 extrastate war years to the model for post-45 civil war onset of Fearon and Laitin (2003). The data used for Table 5 are updated to 2009, using our coding of civil war onsets rather than COWs.<sup>27</sup> The design is a panel with about 165 countries observed from 1945 (or independence) to 2009; the estimation method is logit.

The first column shows that including the last 10 years of civil wars does not change any of the results from our 2003 paper. The second and third columns add separately the total number of extrastate wars in the country prior to 1945, and then the same thing logged (after adding 1). In both cases extrastate war experience before 1945 is a statistically significant predictor of a country's propensity to have civil war onsets post-independence. This is so despite the fact that we are controlling for a number of post-1945 factors that are plausibly affected by prior conflict experience, and in particular per capita income. Substantively, each additional year of pre-45 extrastate war associates with a five percent increase in the odds of conflict breaking out in any given year after independence (or 1945).

## **5 Permanent enemies?**

Thus far we have considered whether amounts of war in a territory before 1945, or specific types of war, predict more or less conflict after 1945. Even with controls for exogenous factors, measures of pre-1945 conflict tend to remain significantly associated with post-45 conflict.

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<sup>27</sup>1999 was the last year used in our 2003 article. See that article for variable definitions. Income is measured here in 2005 dollars. The only difference in variable construction in that political instability is measured as whether there was a one unit or greater change in the Polity measure from year t-2 to t-1.

Table 5: Extrastate war years 1815-1944 predict post WWII civil war onsets

	Model 1	Model 2	Model 3
extrastate		0.050**	
war yrs pre45		(0.008)	
log(extrastate)			0.237* (0.032)
prior war	-0.555* (0.032)	-0.691** (0.010)	-0.643* (0.014)
gdp <sup>a</sup>	-0.111*** (0.000)	-0.098*** (0.001)	-0.098** (0.001)
log(pop) <sup>a</sup>	0.319*** (0.000)	0.232** (0.002)	0.248*** (0.001)
log(% mountains) <sup>a</sup>	0.187* (0.016)	0.170* (0.032)	0.160* (0.045)
oil producer	0.710** (0.003)	0.593* (0.016)	0.602* (0.014)
new state	1.934*** (0.000)	1.851*** (0.000)	1.873*** (0.000)
political instability <sup>a</sup>	0.730** (0.002)	0.761** (0.002)	0.745** (0.002)
anocracy <sup>a</sup>	0.465* (0.027)	0.512* (0.015)	0.504* (0.017)
democracy <sup>a</sup>	-0.356 (0.231)	-0.325 (0.277)	-0.338 (0.256)
ELF	0.409 (0.223)	0.387 (0.257)	0.426 (0.209)
constant	-7.609*** (0.000)	-6.974*** (0.000)	-7.173*** (0.000)
<i>N</i>	7985	7985	7985

<sup>a</sup> lagged one year. *p* values in parentheses

† significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

However, a more focused notion of the “persistence of armed conflict” would ask about the persistence of fighting *between the same combatants* over time. For example, journalists reporting on contemporary ethnic conflicts frequently reference deep historical roots – the idea that group A and group B have been fighting it out, sometimes violently, for decades or even centuries. Indeed, people who find themselves drawn into violent confrontations with other people previously thought of as neighbors often re-tell their own histories (to themselves, as well as to journalists) with Capulet/Montague imagery.<sup>28</sup> Does the historical record bear out this view of repeated conflict

<sup>28</sup>But see Gould (2000) who finds, after careful archival search, quite limited persistence of revenge killings in 19th

among the same combatants?

To assess how typical is this pattern of persistence, we need a way of identifying when combatant groups are “the same” over long periods of time. To do this, and still relying on the COW dataset, we created lists of the combatants – coded in COW as “sidea” and “sideb” – for all wars in several countries in which there have been high levels of conflict in both eras. We ask for each war “In whose name was the conflict fought” and “Who was considered the enemy?” From this exercise, reported below, we find little evidence of strong persistence in the “teams” fighting in the countries that show the highest overall persistence in terms of total war years before and after 1945.

More specifically, we chose three of the countries that experienced above the 90th percentile in number of war years in both periods: China, Sudan and India.<sup>29</sup> We ask if there are links between the wars across the eras suggesting that past conflicts create or reflect permanent enemies. Our analysis below shows little correspondence of teams reenacting their violent conflicts across the two eras.

## 5.1 China

In the 130 years from 1815-1944, China was engaged in 46 wars with 171 years of dyadic combat. Post-1944 (now in a 65 year period), China was engaged in 7 wars and 16 years of dyadic combat. This puts China as unusually affected by civil war in both eras. Two types of conflicts persisted across eras: Tibet had 3 wars for 5 years in the first era; and 2 wars for 5 years in the second. Nationalists vs. Communists had 3 wars with 12 years of combat in the first era; 2 wars and six years of combat in the second era. Since the Nationalist/Communist battle occurred at the end of the first and the beginning of the second period, it is not really a case of an enduring conflict that never got erased. One can consider Taiwan as an example of a persistent conflict between long-run enemies, although it has not been a violent conflict for some time. Only Tibet has that quality of

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century Corsica.

<sup>29</sup>The only other countries that are above the 90th percentile for both eras are Indonesia and Ethiopia.

persistence of “teams.”

However, wars reaching COW levels in China disappeared against Muslims: with Muslim groups against the state, there were nine wars with 53 years of combat in the first era; none in the second (though some conflict below COW thresholds certainly persisted among at least the Uighurs in Xingiang). Similarly wars with all sorts of religious sects – the Taipings, the Niens, the Zaili sect, and the National Religious Alliance that organized a nationalist rebellion in 1911 – were ubiquitous in the first era, and absent in the second (though certainly, as with the Falun Gong, not without grievances). The Chinese government, outside of Tibet, got control over its peripheries in the first era and only faced violent incidents from these groups that did not reach “war” levels in the second era. The intra-state wars (though COW labels them as non-state until 1860) in the first era reflect the weakness of a pre-modern state and the gradual construction of modern state.

## **5.2 India**

The territory of today’s India experienced 11 wars for 23 years of warfare in the 1815-1944 period. Seven of the 11 were peripheral rebellions against the British, three of them in the Punjab (two of those three with the Sikhs), and 1 from a Muslim group in the south. Post-1944, there were 10 wars with 30 years of warfare. Five of them were peripheral rebellions now against the independent Indian state. One of them (Golden Temple) was against the Sikhs, but four of them for 22 of the years of rebellion concern extra- and intra-state warfare in Kashmir. As sovereigns in India, the British in the first era and the government in Delhi in the second both faced peripheral battles challenging their rule. But they were not from the same population base, moving from the Punjab (the principal challenge to British hegemony) to Kashmir (the *bête noir* for Delhi’s territorial claims).

## **5.3 Sudan**

Pre-1945 Sudan had 9 wars for 25 years of warfare. Seven of the wars were fought against imperial overrule. Two of them were wars fought against foreign imposition of armies/taxes over the Arab population of the Sudan. Five of them involved Muslim rejection of Christian rulers, and were

fought by followers of a Mahdi. Post-1945, there have been four wars, with 39 years of fighting. The COW-listed wars were not the North of the country (mostly Arabic speakers) fighting against foreigners, but the South of the country (mostly speakers of African languages) fighting against the North. Here we have two wars accounting for 33 years of warfare, and one war in which the southern rebels were fighting against each other. If there was persistence, it was rural armies fighting against foreign rule. But the foreign rulers were different, and the rebels came from a different section of the country.

So we could not say, for China, for India and for Sudan, that the conflicts of the 19th century were unsolved and re-appeared in a different guise in the second half of the 20th century. Meanwhile, these three countries are above the 90th percentile in land area and above the 80th percentile in population (with China and India above the 90th). For these countries with the greatest persistence, the ecology of country and population size – and possibly also legacies of multiple relatively strong precolonial authorities – accounts for peripheral rebellion while perennial enemies do not.

## **6 Data issues**

We have relied in the paper on the COW list of all types of wars. We have a number of concerns with the COW criteria, application, and list, however. We are currently engaged in producing a revised list of pre-1945 armed conflicts, a project that will take some time. To perform a preliminary check, we randomly selected nine countries from the COW list of sovereign states, although we eliminated countries in the OECD as there would be less chance for error in these well-researched countries (therefore our findings are biased in the direction of finding error). We researched from secondary source histories as well as from coding efforts by Gleditsch (2004), Wimmer and Min (2006, 2009), and from White (<http://necrometrics.com/>).

Our goal was to code wars involving these countries using the criteria articulated in Fearon and Laitin (2003) and Fearon (2004), which differ from COW's in several ways. First, whereas

COW's criteria say that they require evidence of 1,000 killed *per year*, we apply a lower threshold of 1,000 killed total, with at least 100 per year on average over the course of the conflict. As discussed below, we also have different criteria for marking start and end years, as well as specific criteria for differentiating distinct wars (which as far as we know are not articulated in the COW project).

There are undoubtedly judgment calls for this new coding exercise. Casualty reports (to see if a 1,000 death threshold is met) are extremely difficult to confirm. We therefore plan to provide in our dataset a confidence level as to whether a conflict actually meets this threshold. Furthermore, at least for the purpose of estimating the association between conflict in an area before 1945 and conflict afterwards, the COW project's approach of lumping myriad resistance movements and intrawar civil conflicts under the headings of "World War I" and "World War II" is problematic.

Our initial efforts to recode two types of COW wars – "intrastate war" and "extra-systemic war" – suggest difficulties in application of COW's criteria for start and end dates and for how conflicts should be individuated. In the two major volumes describing the enterprise (Singer and Small 1972; Small and Singer 1982) the stated criteria say very little about how to specify the start and end of a single war. In a series of articles (the most recent, n.d., on the COW website), Meredith Sarkees partially remedies the coding ambiguities and discusses in some detail how the criteria have evolved especially for civil war onsets. According to her treatment, a war onset is said to occur in the first month of a continuous 12-month period in which there was military action, with active participation of the central government, (for civil wars) effective resistance by both sides (that is, with at least a minimum proportion of deaths on each side), and a total of 1,000 combat related deaths during *each* year of the war. The criteria for the end of a war are complicated and less clear. Sarkees refers to "the date at which the last sustained combat took place that contributed to the 1,000 battle-related deaths within a year," and also to truces, "apparent defeat of one side," or "a 12 month period without 1,000 battle deaths," and, relatedly, "the last day in which it can be said that 1,000 battle deaths were suffered during the previous 12 months." "Temporary lulls in fighting" are not coded as war ends unless they last for more than a year and there are less than

1,000 killed in that year. However, a break in fighting of more than 30 days is coded as a “break in the war” – which is not the same thing as a war end, apparently – if there was a formal agreement like a truce, cease-fire, or armistice agreement. If such a pause lasts over a year, then a new war start is coded if hostilities resume.

Beyond the fact that it is typically impossible to estimate civil or extrastate war fatalities *by the month*, two separate conceptual issues arise. First, coding ambiguities have not been fully erased. Consider two countries over a 26 month period in which there is armed conflict between the state and rebels. In the first country, there are 9 months in which there are 100 fatalities followed by 3 months of lull in which there are no fatalities, followed again by 9 months of 100 fatalities, 3 months of 0 fatalities and finally 2 months of 100 fatalities. By current COW criteria, this country did not have a civil war onset, as there is no continuous period of 12 months that reached the 1,000 death threshold. In the second country, there are 100 deaths for each of the first 10 months, followed by a 6 month lull, and followed again by 10 months with 100 deaths each month. In this second country, there is an onset in the first month since 1000 are killed within the next year. The next twelve months (starting in month 11) has only 800 deaths and therefore a war ended after the initial 10 months. But on the 17th month, a new civil war erupts, with a COW coding of two distinct civil wars over the 26 month period. However, these two cases are virtually similar (2,000 combat related deaths over a 26 month period) but with quite different results in terms of counting onsets.

Other anomalies can be imagined as well, which raises questions about the external validity of the measurement rules. This is not merely a clever arithmetic anomaly. To take just one of many such examples from the post 1945 period, and elaborating a point from our first paragraph above, COW codes three distinct civil wars in Angola since independence in 1975: a war of “Angolan Control” from 1976 to 1991, a “War of the Cities” from October 28 1992 to November 15 1994, and a “Third Angolan War” from December 4 1998 to February 22 2002. Since there is fighting almost continually through this whole period between UNITA and the government, though admittedly with some ebbs, it is unclear to us why COW works with coding rules that divide up the conflict

into three distinct wars like this. A consequence of their approach is that COW may systematically underestimate the number of years of fighting in the conflicts they find. At the same time, COW may either over or underestimate the number of distinct wars, as episodes that are naturally seen as a single conflict get broken into multiple episodes according to major battles, while fighting that meets the 1,000 death threshold in a slow war of attrition may be missed entirely.

Second, particularly for civil and extrastate war and particularly for the 19th century, COW codings tend to focus on significant battles and miss the continuity of warfare that has its ebbs and flows over an extended period. Especially in civil wars extending to the peripheral areas of a state's jurisdiction, rebels often lay low for rather extended periods to regain supplies and recruits. Weather patterns also can depress armed conflict for extended periods. Finally, states may reduce attention on a rebellion that is not challenging their authority when other issues arise. To count each resumption of hostilities as another onset does not accord with the continuity of actors and issues that constitute those hostilities as a war. For the 19th century in particular many conflicts appear as episodes of larger campaigns or long-running violent encounters that do not have obvious, natural demarcations in time. For example, were US army battles with various Native American groups through the 19th century many distinct "extra-systemic" wars, or one very long one?

It is not clear to us that there are any operational coding criteria that are unambiguously "the right ones" for coding distinct intra- and extra-systemic wars. In our 2003 article and in Fearon (2004), we nonetheless tried to give criteria that explicitly address the question of how to code civil war starts and ends. We proposed to identify the start of a civil war by the specific violent events (between organized armed groups fighting for power either at the center or in a region of a country) that initiated a longer sequence of violent encounters that collectively meet our threshold criteria of 1000 dead total, and at least 100 killed on both or all sides. We say a civil war has ended if at least two years pass with very low levels of violence, and there is some indication that the parties expect that the conflict has ended as opposed to their merely taking a pause to rearm or gear up for another round. For example, a peace treaty or formal truce would be such indications. In practice, of course, there are cases where it is certainly a judgment call whether the expectation



was continued conflict or that a peace had been reached.

Our approach thus differs from that of recent efforts to adapt the Uppsala/Prio Armed Conflict Database to code for distinct episodes of conflict (Kreutz 2010). They apply a criterion of one year (or two, or ten, for different codings) with no conflict above their 25 death threshold. This has the advantage of being relatively definite, but the disadvantage of making many long-running, low level conflicts that flit above and below the 25 dead threshold look like many distinct civil wars. In our view they often are more naturally seen as a single, long-running but low level civil conflict, that happens often by chance to get above or below the threshold in some years.

In any event, we are currently trying to apply these criteria to a coding of intra- and extra-systemic conflicts from 1815 to 1945. One important difference from COW that should be kept in mind is that our threshold is in effect significantly lower than COW's: COW requires 1,000 killed in a 12 month period, whereas we allow for 1,000 death total over the length of the conflict (as long as the average per year is at least 100). It has never been clear to us whether the COW cases actually satisfy the 1000 dead per year criterion, as some of their listed civil conflicts after 1945 seem unlikely to us to have ever met this threshold (and for many listed conflicts, it seems impossible that one could estimate numbers killed by 12 month periods). Nonetheless, to the extent that the COW coders do try to apply this rule, it could lead our list to be larger than theirs.

To illustrate possible results of these different coding approaches, consider the case of Egypt. COW apparently codes significant battles as wars, where we sometimes see a set of related battles over time as campaigns in a larger insurgency. For example (see Table 6 below), COW lists two British-Mahdi wars, one from 1881-1885, and the second from 1896-1899. We read this as a continuous series of campaigns from 1881 through 1899. Therefore while COW records more onsets taking place in the territory that is today's Egypt in the period from 1815-1944 (15 to 7), we record more years of war that are being fought on this same territory (29 to 37).

Table 6: Comparison of Coding Results for Egypt: COW and Fearon/Laitin (in progress)

Country	Our coding			COW coding		
	War Name	Start Year	End Year	War Name	Start Year	End Year
Egypt	Conquest of Sudan and Sudanese Revolts <sup>30</sup>	1820	1824	Ottoman Conquest of Sudan	1820	1821
Egypt	Wahhabi Revolt <sup>31</sup>	1823	1823			
Egypt	Radwan Rebellion <sup>32</sup>	1824	1824	Egypt-Mahdi War	1824	1824
Egypt	Taka Expedition <sup>33</sup>	1831	1831	Egyptian-Taka Expedition	1831	1832
Egypt	Egyptian-Ottoman War of 1831 <sup>34</sup>	1831	1833	First Syrian War	1831	1832
Egypt	Syrian Revolts Against Egypt <sup>35</sup>	1834	1841	Egypt-Palestinian Anti-Conscription Revolt	1834	1834
				Druze Rebellion	1837	1838
Egypt	Egyptian-Ottoman War of 1839 <sup>36</sup>	1839	1841	Lebanon Insurgency	1840	1840
				Second Syrian War Phase 1	1839	1839
Egypt				Second Syrian War Phase 2	1840	1840
Egypt				Attack on Bahr el-Ghazal	1869	1870
Egypt				Egypt-Ethiopian War	1875	1876
Egypt				Egypt-Sudanese Slavers War	1878	1879
Egypt	Mahdist Revolt <sup>37</sup>	1881	1899	First British-Mahdi War	1881	1885
Egypt	Egyptian Rebels vs. UK <sup>38</sup>	1882	1882	Second British-Mahdi War	1896	1899
Egypt	Egyptian Revolt <sup>39</sup>	1919	1919	Conquest of Egypt	1882	1882

<sup>30</sup>Holt and Daly (2011, 36-42); McGregor (2006, 70-78).

<sup>31</sup>McGregor (2006, 81).

<sup>32</sup>McGregor (2006, 81).

<sup>33</sup>Holt and Daly (2011, 46-47); McGregor (2006, 83).

<sup>34</sup>Aksan (2007, 367-374); Little (1967, 33)

<sup>35</sup>Aksan (2007, 383-385, 405-406). COW codes only for the largest incidents in a series of essentially continuous revolts against Egyptian rule. Aksan makes it clear that “pockets of resistance, in hard-to-reach regions such as Hawran, remained unbowed” (384) beyond the years given by COW.

<sup>36</sup>Aksan (2007, 388-398, 404-406); Little (1967, 33-34). COW codes this as two conflicts, apparently because there were efforts at peace in 1839 and early 1840, after which European powers like Britain entered the war on the Ottoman side. However, by our criteria, this is coded as a single war.

<sup>37</sup>Falls (1967, 281-308); Holt and Daly (2011, 65-70); Little (1967, 46-49). While COW codes the Mahdist War as two conflicts in 1881-1885 and 1896-1899, Holt and Daly (74-79) make it clear that fighting continued in 1885-1896. There was especially heavy fighting in Darfur throughout the period, and conflict on the border between Egypt and Sudan, as well as fighting between the Mahdists and the Ethiopians.

<sup>38</sup>Little (1967, 44-45); Williams (1967, 243-278).

<sup>39</sup>Little (1967, 72-75).

## 7 Conclusion

In this paper, we asked whether armed conflict has been persistent in particular places over the last two centuries, and if so, whether conflict-ridden places have durable features, social or geographical, that have favored armed conflict, or whether armed conflict at one time might have a causal effect on propensity for armed conflict at later times. We relied on Correlates of War data for all types of wars (though we addressed problems with this dataset and proposed criteria for a war list that has greater external validity) and placed these wars in the territories on which they were fought.

The data reveal significant levels of persistence across our two eras (1815-1944; 1945-2007). Differentiating by type of war, we find that extrastate and non-state wars in the earlier era are especially associated with post-World War II wars. Unlike intra-state and interstate wars, which may have a greater tendency to have Tilly-like state-building effects, the extra-state and non-state wars of the 19th century may have had state-destroying or perhaps state-preventing implications. Alternatively, persistence of more and/or more developed precolonial state structures may have made state construction within post-colonial borders more conflict prone.<sup>40</sup>

Over the full set of wars across our two periods, exogenous factors such as geography and demography are important in explaining where conflicts persist. More populous administrative units are consistently more likely to have armed conflicts, as are those with relatively rough terrain. Contemporary ethnic diversity is correlated with post-1945 conflict, but is un- or negatively correlated with pre-1945 conflict. This is likely the result of state-building selection effects: territories that were diverse in the 19th century but became less so by 1945 had seen relatively successful state building that lowered conflict risk after World War II. We found some indication that pre-1800 ethnic diversity predicts post-1945 war, although the relationship disappears when one compares territories within regions.

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<sup>40</sup>Consistent with this conjecture, we saw little indication that there is a great deal of persistence in the particular combatants across eras although both our “few historical enemies” and “strong precolonial institutions” conjectures await systematic test.

The fact that persistence effects hold up when controlling for exogenous influences like terrain, territory size, and ethnic diversity is consistent with prior conflict causing, to some degree, later armed conflict. We cannot rule out, however, that there are unmeasured, relatively unchanging determinants of conflict risk that explain this residual persistence. Our intention is to more closely examine the conjectures about the role of pre-colonial state structures to try to make progress on this question of the long-run historical legacies of armed conflict.

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Figure 1: Number of wars before and after 1945, by war type and region

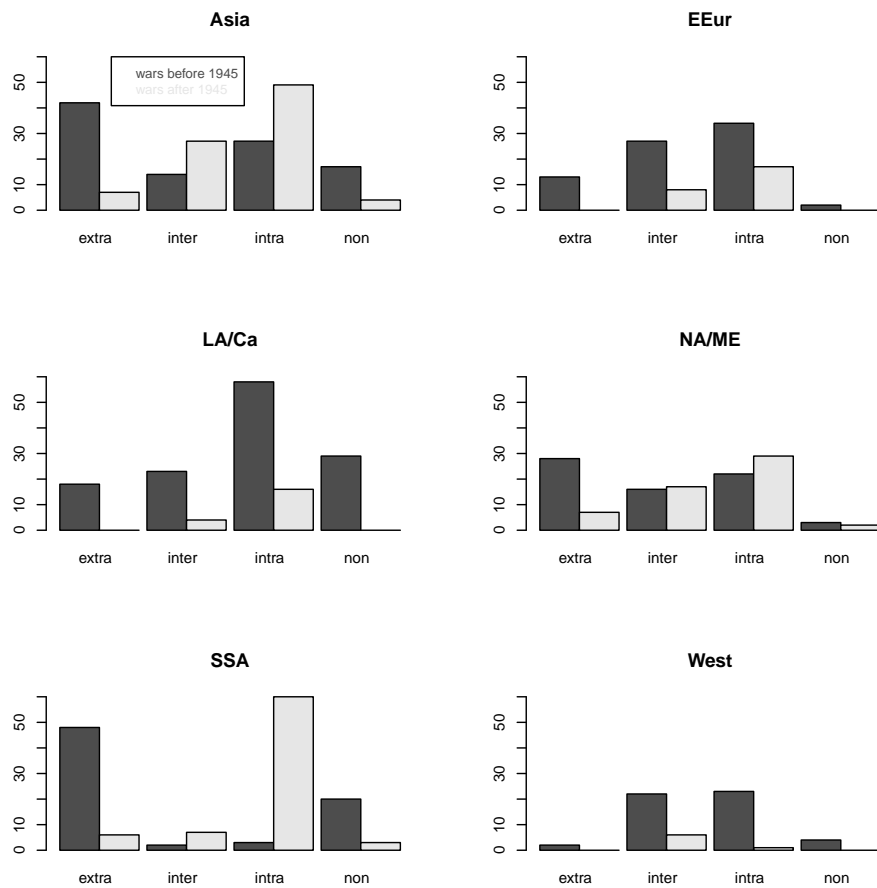




Figure 2: Persistence of all COW war types, 1816-2007

**Persistence of COW war years, before/after 1945**

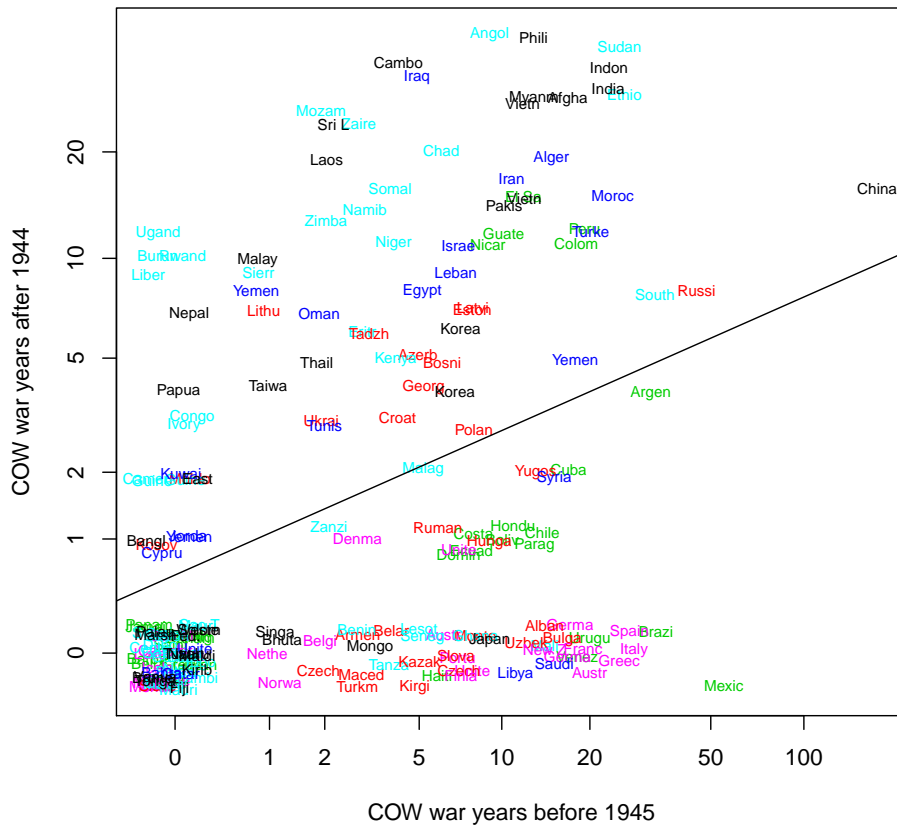


Figure 3: Persistence of all COW war types by region

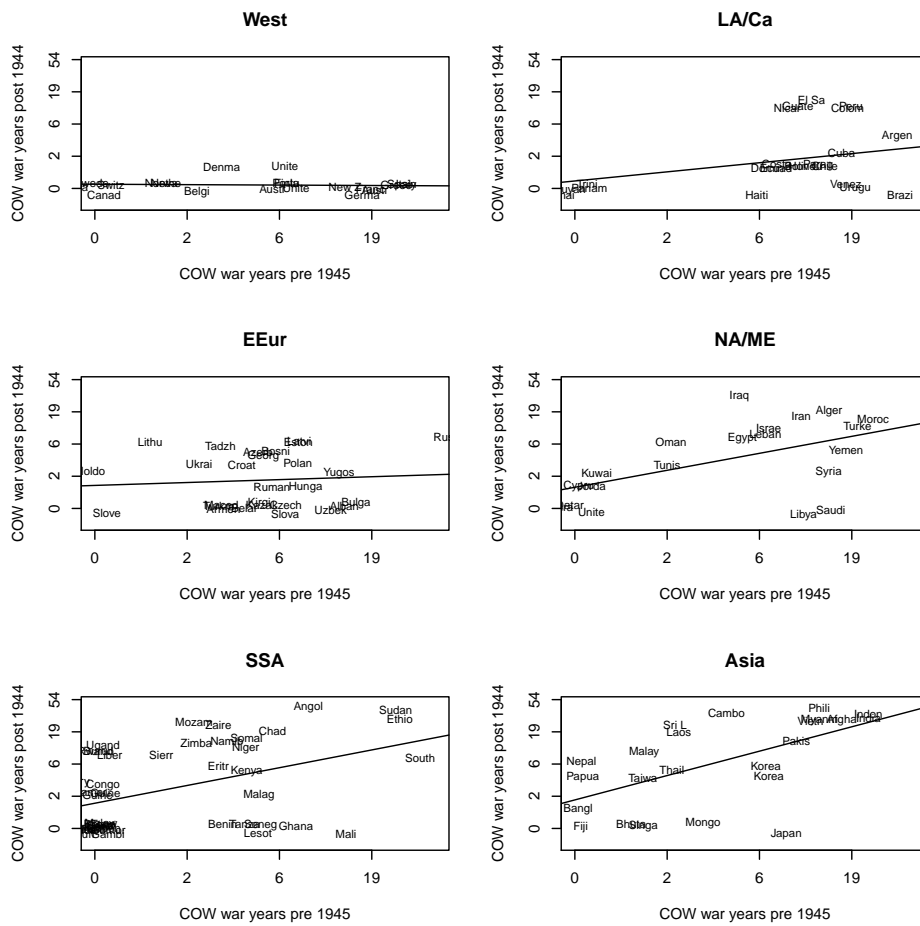


Figure 4: Colonial/imperial war and post-45 civil war by region

