Supplemental Materials to "Research Note: Combining Civil and Interstate Wars"

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Appendix A: Disaggregated Interstate War Analyses

To demonstrate the potential costs of always studying civil and interstate war separately, we here examine the consequences of using empirical differences to divide conflicts into different types. Supporting our claim that separate study is primarily the result of path dependence rather than a conscious decision, most scholars do not explain why they limit their study to civil or interstate war, they simply conduct a study of interstate or civil war independently of the other. However, many civil war articles at least begin with an argument for studying civil war by highlighting empirical differences between the two types. We find eight primary asserted distinctions between civil and interstate wars in existing literature.

The most common empirical distinctions highlighted between civil and interstate wars are that, at least since World War II, civil wars are more frequent, more deadly, and are more likely to recur than are interstate wars.[1] Fourth, scholars point out that civil wars, on average, tend to be long while interstate wars tend to be short.[2] A fifth cited difference between civil and interstate wars is that the former are fought between adversaries very different in power, while the latter are more often fought between roughly equal opponents.[3] Sixth, fighting in civil war generally takes place

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[1] See, for example, Mason and Fett 1996, Walter 1997, Henderson and Singer 2000, Fearon and Laitin 2003, Collier and Hoeffler 2004, and Lacina 2006

[2] Balch-Lindsay and Enterline 2000, Regan 2002, and Collier et al. 2003, 2004

[3] See, for example, Eckstein 1965

within one state, while in interstate war it may take place in two or more.[4] Seventh, scholars point out that interstate conflicts are primarily decided by conventional warfare while intrastate wars much more often feature guerrilla warfare.[5] Eighth, and finally, many scholars point out that, historically, most interstate wars end in some sort of negotiated settlement while most intrastate wars do not.[6]

Empirically, then, civil and interstate wars differ in many important ways. And to the extent that these differences are asserted to argue that civil war is a topic worthy of study, we certainly agree. However, we do not believe that empirical differences are sufficient justification for studying the two types of war separately. Any sample of cases can be divided such that one sub-sample differs from another on key indicators. Many of the distinctions presented above, for example, can also be drawn within the population of interstate wars.

Some interstate wars have tragically high fatalities (World War II tops the COW list with 16 million dead) while others have relatively low fatalities (the Falklands War anchors COW's low end with an inexplicable 910 battle fatalities). If the high average death toll in civil wars means they should be studied separately from interstate wars, then it is equally sound to study high fatality interstate wars separately from low fatality interstate wars. Drawing out the list of distinctions, it

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[4] In creating the COW civil war dataset, Small and Singer (1982:211) write: "One basic property of an internal conflict is obviously that it is internal to a state; that is, significant military action occurs between subjects within the boundaries of the Metropole."

[5] Kalyvas writes that "(a) striking empirical observation is that very few civil wars are fought by means of conventional warfare…Conversely, almost all interstate wars are fought conventionally." (2006:83).

[6] Walter (1997:335) begins her influential article with the observation that "Unlike interstate wars, civil wars rarely end in negotiated settlements."

would similarly be appropriate to study recurrent, longer, geographically-constrained, guerrilla wars between unequal combatants separately from non-repeating, short, widely-dispersed, conventional wars among equals.

In order to demonstrate the perverse inferential consequences that result from using observed differences among wars to analyze them separately, we begin with an all-dyads dataset covering the years 1816 to 2000. During this time period there were 124 war initiations among dyads according to the COW project (with war initiation occurring when a dyad's members are listed on opposite sides of a war on the first day of the war). An early influential study of war onset by Stuart Bremer demonstrates that these war onsets more frequently occur when dyads are composed of neighbors that are not grossly unequal in power, are both major powers, are not allied, are non-democratic, underdeveloped, and are highly militarized.[7] Given how influential Bremer's study is, we treat his findings as the conventional wisdom about interstate war onset.

Not all of the factors claimed to render civil and interstate wars distinct from each other are easy to measure for a demonstration like this. Yet, of those presented above, six are reasonably straightforward. We thus offer analysis of war onset in six subsets of interstate wars. Each analysis has a slightly different number of dyad-years because ongoing war years are eliminated, and how many wars there are differs from analysis to analysis because we are imposing arbitrarily different definitions of war in each analysis. We compare the results from these six analyses with the results from a normal analysis that combines all interstate war onsets.

A first distinction we can make is between high and low fatality interstate wars. The average fatality level in COW interstate wars is 402,016 dead. But only two wars are above that average (WWI and WWII). Since a subset of cases with only two wars, and particularly those two wars, is

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[7] Bremer 1992

unappealing for estimation purposes, we instead use as our low/hi fatality cut-point the median number killed, a figure of 8,000 dead.

The large literature on interstate rivalry is motivated by the observation that while rivalry is rare, rivals nevertheless account for the majority of wars and disputes.[8] This is only possible because conflicts between rivals are so much more likely to recur than are conflicts among non-rivals. Consequently, we define wars among rivals as more likely to be recurrent wars than are wars among non-rivals, and use this as our second distinction among interstate wars. There are 51 onsets of wars among rivals.[9]

The duration distinction is easy to apply to interstate wars. The average duration of a COW interstate war is 427 days (the longest is the post-1965 internationalized part of the Vietnam War [3735 days] and the shortest is the 1969 Football War between Honduras and El Salvador [5 days]). Like fatalities, duration is skewed by a few extreme outliers. Consequently, we split the sample at the median, and define wars lasting longer than 141 days as "Long Wars."

A fourth distinction we make among interstate wars divides those among grossly-unequal adversaries from those among more evenly-matched opponents. A 10:1 ratio is widely regarded as representing overwhelming preponderance.[10] We use that ratio to separate out interstate wars among unequals, finding 24 instances in which war originator dyads were characterized by overwhelming preponderance.

The last two distinctions we make concern where interstate wars were fought and how they were fought. No COW dataset indicates which specific states experienced conflict physically within

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[8] See, for example, Diehl and Goertz 2000

[9] This is based on Diehl and Goertz's (2000:145-146) definition of enduring rivalry.

[10] Weede 1976; Bremer 1992

their territory, or indicates whether guerrilla tactics were employed in the war. Lacking such information, we combed historical summaries of each COW war in military encyclopedias[11] to gather information about these alleged characteristics unique to civil wars. It turns out that a near majority (59) of COW interstate wars were waged within only one state, and similarly that a surprisingly high number (24) of COW <u>interstate</u> wars included guerrilla combat.

High fatalities, frequent recurrence, long duration, vast inequality among belligerents, geographic constraints, and guerrilla tactics are six of the distinctions researchers have pointed to between civil and interstate wars. These same distinctions can be made among interstate wars. If interstate war analyses were divided by the same logic, they would produce something like Table 1A:

<div align="center">*******Table 1A About Here*******</div>

The first column of Table 1A reports an extension of Bremer's 1992 study. He performed a Poisson analysis of originator war onsets across all COW interstate wars over the 1816-1965 time frame. He included seven predictor variables, all of which were significant influences on the probability of war onset. We include the same variables as in Bremer's canonical study, measured in the same way. The major difference between our analysis in column 1 and his is that ours is a logit model of all dyad years. We employ the standard logit estimation technique because Bremer's estimation technique is very uncommon. Thus, while we do not technically replicate his study, we replicate it after a fashion as we show similar substantive effects of covariates on war onset across all "types" of interstate wars. A second difference between our studies is that our temporal domain extends 35 years past Bremer's.

Turning to the specifics of our analysis, "Neighbors" is a dummy equal to one when the dyad members are contiguous by land or up to 150 miles of water. "Preponderance" is a dummy

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[11] Clodfelter 2008; Dupuy and Dupuy 1993

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equal to one when the dyad members' relative power ratio (stronger to weaker) is at least 10:1. "Major Powers" is the number of dyad members qualifying as Major Powers in the dyad during that observation's year. "Allies" is a dummy equal to one if the dyad members are aligned in any type of COW military alliance. "Joint Democracy" is a dummy equal to one if both dyad members' Polity IV "Democ-Autoc" score is greater than five. "Development" is the number of dyad members whose share of COW economic capabilities (iron/steel production and energy consumption) is greater than their share of demographic capabilities (total population and urban population). "Militarization" is the number of dyad members whose share of COW military capabilities (number of troops and total military expenditures) is greater than their share of demographic capabilities. In "Dangerous Dyads," Bremer reports that dyads composed of Neighbors, Major Powers, and Militarized states experience more war onsets, while dyads characterized by Preponderance, Allies, Joint Democracy, and Development experience fewer war onsets. In Column 1 of Table 1A, we show that similar substantive interpretations follow from our much more common form of estimation, and suggest we treat these substantive claims as the conventional wisdom about interstate war onset.

In contrast, when we turn to analysis of war onset constrained by characteristics similar to the differences between civil and interstate wars, the conventional wisdom falls apart. The most important difference is that there is not a single subset of interstate wars in which a significant Joint Democracy effect is uncovered (see the lower highlighted row in Table 1A). The democratic peace is clearly the most robust, widely-recognized, politically-influential finding about interstate war to emerge in the last few decades of quantitative research on the subject. It would have gone undiscovered if scholars had arbitrarily divided interstate wars based on the same observed empirical differences between civil and interstate wars.

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In addition to the elimination of the democratic peace, Columns 2-7 reveal no consistent findings about the pacifying influence of overwhelming preponderance. In their comprehensive summary of quantitative research on interstate war, Daniel Geller and David Singer conclude that the three strongest empirical patterns in interstate war onset are the Democratic Peace, the strong positive association between contiguity and war onset, and the strong negative relationship between preponderance and war mirrored by the strong positive relationship between parity and war. [12] As can be seen in the upper highlighted row in Table 1A, in only three subsets of interstate wars (Hi Fatality, Rival, and Long Wars) does Preponderance significantly reduce the likelihood of war. It appears to do so in the Unequal Wars subset, but given that our measure of preponderance and of Wars Among Unequals both employ the 10:1 ratio, it is necessarily the case that all war onsets in this subset would have a value of 1 on the Preponderance variable. To avoid this perfect identification, we replace the Preponderance dummy variable with the simple power ratio of the weaker to the stronger dyad member. Given conventional wisdom, this variable should increase the likelihood of war. Instead, we find a negative, that is, wrong signed, significant coefficient for power ratio in the fifth column of Table 1A. The remaining columns of Table 1A (for One State, and Guerrilla Wars) only further muddy the waters, as in both of them the influence of Preponderance is insignificant. Consequently, were Interstate War scholars to isolate analysis of wars based on the various criteria here, some would find that Preponderance is pacifying, some that it increases the risk of war, and others that it has no influence on war onset. Another of the three strongest findings about war onset would be lost.

Of the other variables, only Neighbors, the dichotomous contiguity measure, is consistently related to war onset across all of the subsets. This means that if we regard Table 1A's first column

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[12] Geller and Singer 1998:75-76

as representing the conventional wisdom, and think of columns 2 through 7 as the range of findings interstate war researchers would have generated had they separated interstate wars by "types," then six-sevenths of the conventional wisdom would have been lost. Perhaps most importantly, the two-sevenths most unambiguously lost are two of the most widely-accepted findings about interstate war onset.

This analysis demonstrates, then, that using empirical differences to divide conflicts can yield nonsensical results. It does not, on its own, demonstrate that studying civil and interstate wars separately is a bad idea. However, it does show that there is a potential cost to doing so—dividing wars into different types and studying them separately can cause us to fail to identify general patterns that hold across conflicts. In the next section, we argue that these phenomena should in many cases be studied together because, theoretically, they are caused by the same underlying factors.

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Table 1A: Distinguishing Among "Types" of Interstate Wars

		All Wars	Hi Fatality Wars	Rival Wars	Long Wars	Unequal Wars	One State Wars	Guerrilla Wars
Constant	Coef.	-3.98***	-4.29***	-4.19***	-4.15***	-4.10***	-4.23***	-4.31***
	(s.e.)	(0.08)	(0.13)	(0.13)	(0.12)	(0.18)	(0.13)	(0.16)
Neighbors		1.17***	1.08***	1.30***	1.11***	0.62***	1.11***	1.00***
		(0.09)	(0.12)	(0.13)	(0.11)	(0.18)	(0.13)	(0.17)
Preponderance		-0.20**	-0.28**	-0.39***	-0.38***	-2.81**††	-0.01	-0.21
		(0.09)	(0.12)	(0.15)	(0.14)	(1.24)	(0.11)	(0.17)
Major Powers		0.26***	0.30***	0.14	0.26***	0.42**	0.28***	0.28**
		(0.06)	(0.07)	(0.09)	(0.08)	(0.17)	(0.09)	(0.11)
Allies		-0.27**	-0.25*	-0.35**	-0.49***	0.14	-0.13	-0.26
		(0.11)	(0.14)	(0.16)	(0.18)	(0.21)	(0.14)	(0.22)
Joint Democracy		-0.47**	-0.02†	-0.19	-0.01†	-0.21	-0.21	-0.22
		(0.20)	(0.01)	(0.21)	(0.01)	(0.29)	(0.21)	(0.28)
Development		-0.17***	-0.09	-0.31***	-0.19**	-0.20	-0.27***	-0.01
		(0.07)	(0.08)	(0.11)	(0.09)	(0.14)	(0.10)	(0.12)
Militarization		0.24***	0.26***	0.26***	0.28***	0.28**	0.19**	0.10
		(0.06)	(0.08)	(0.08)	(0.08)	(0.12)	(0.08)	(0.11)
Sample Size:		345183	345197	345231	345183	345231	345243	345223
Model X^2:		314.67***	173.76***	194.02***	170.44***	52.61***	142.63***	60.55***

*** = $p < 0.01$; ** = $p < 0.05$; * = $p < 0.10$

† = Joint Democracy dummy replaced with continuous Dem_{Lo} variable to avoid perfect identification.

†† = Preponderance dummy replaced with continuous Capability Ratio variable (weaker/stronger) to avoid perfect identification.

Note that the number of cases varies slightly across columns because ongoing war years (within each type) are dropped.

Appendix B: Multinomial Logit Analyses of Conflict Outcome

In our research note "Combining Civil and Interstate Wars," we conducted logistic regression analyses of conflict outcome with a dichotomous dependent variable, measured "1" if the conflict terminated in negotiated settlement and "0" if it terminated in any other outcome. This means, however, that the "0" cases included military victories, cases of "low activity" in which conflicts ended because the level of activity fell below 25 battle deaths in a calendar year for two consecutive years but there was no decisive victory, and "other," a category that includes several types but is primarily made up of anti-colonial conflicts that ended with the independence of the country. These types of termination are clearly not equivalent. Here, we examine each of these outcomes individually by conducting multinomial logit analyses with each of these categories as outcomes and the same independent variables as in the text. Conflicts ending in "low activity" are the base category, so each set of results compare the likelihood of a specific type of termination to that of low activity. Table 2A reports the results of these analyses.

<div align="center">*****Table 2A About Here*****</div>

In our research note, we found that the civil war dummy was not a significant predictor of negotiated settlement when we included variables in combined analysis. The results in Table 2A, likewise, show that the civil war dummy is insignificant for all outcomes except "other." The fact that civil war is significant and has a huge coefficient for "other" is unsurprising, given that these are primarily the outcome of anticolonial wars (which are treated as civil wars). However, the insignificance of civil war for either victory or settlement suggests that, when we control for theoretically motivated variables, civil wars are not less likely to end in settlement or more likely to end in victory than interstate wars (compared to low activity). Rather, the frequently-cited trend that civil wars end in victory more frequently and settlement less frequently than interstate wars appears

to be the product of differences in the attributes of these conflicts, not in some fundamental difference between the two types.

The results presented in Table 2A are interesting in other ways as well. In particular, they show that several of these variables have significant effects on "definitive" outcomes (i.e., victory or settlement as opposed to low activity). Recurrent wars are less likely to end in a definitive outcome, as are wars where the troop ratio is more uneven. Democracy, meanwhile, is actually positive for all three outcomes (although only statistically significant for settlement), suggesting that democracies are considerably less likely to have wars decline in intensity until they drop out of the dataset without a definitive end, but rather that wars are more likely to end in settlement, victory, or some other outcome.

Whether or not a conflict is over territory, meanwhile, seems to make victory considerably less likely and has only a small positive effect on settlement (relative to low activity), suggesting that the reason that we find that territorial wars are more likely to end in settlement in the logistic regression results is in part because they are much less likely to end in victory by one side. In fact, when we change the base outcome to military victory we find that territorial conflicts are significantly more likely to end in both settlement and low activity as compared to military victory.

Finally, the results in Table 2A show that Peacekeeping has a big positive effect on the likelihood of settlement but no significant effect on either victory or "other." This is not surprising, if peacekeeping is effective it should mitigate some of the credibility concerns associated with trying to resolve conflicts but there is no reason to think that it would have any noticeable effect on the other outcomes.

In conclusion, then, the results in Table 2A are generally in line with what we would expect to find on the main independent variables. They show, most importantly for the purposes here, that the finding in the research note that the civil war dummy is insignificant as a predictor of negotiated

settlement is not an artifact of the dichotomous measure of the dependent variable. The differences between civil and interstate wars in the ways that they end are relatively easy to explain with the inclusion of theoretically motivated independent variables.

Table 2A: Multinomial Logistic Regression Analyses of Conflict Termination

	Settlement	Victory	Other
Civil War	-0.161	0.432	17.107***
	(0.577)	(0.673)	(1.295)
Peacekeeping	1.077**	-0.370	-0.215
	(0.493)	(0.739)	(1.266)
Territory	0.398	-1.178**	-0.245
	(0.433)	(0.492)	(0.809)
Recurring War	-0.882**	-2.021***	-0.250
	(0.374)	(0.564)	(0.992)
Log Troop Ratio	-0.362***	-0.301*	-0.968
	(0.120)	(0.156)	(0.244)
Democracy	0.942*	0.827	1.155
	(0.496)	(0.594)	(1.068)
Log Total Troops	-0.239	-0.122	0.154
	(0.191)	(0.202)	(0.655)
Log Total Population	-0.166	-0.146	0.192
	(0.208)	(0.217)	(0.529)
Duration	0.005	-0.068	0.031
	(0.020)	(0.052)	(0.041)
Constant	3.502**	3.400**	-19.341
	(1.649)	(1.169)	(3.594)
Observations	236		

Reported are coefficients with robust standard errors
*=p<0.10; **=p<0.05; ***=p<0.01