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More Combatant Groups, More Terror?: Empirical Tests of an Outbidding Logic

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We examine and test the logic that outbidding among insurgent groups results in more suicide terrorism specifically and more terrorism of any type, which has become a popular argument in recent years. A global analysis of terrorism from 1970–2004 provides scant support for the notion that outbidding increases suicide terrorism. An extension of the argument to all types of terrorist attacks provides even less support. The logic of outbidding has received considerable attention in academic and policy circles in recent years.[1] Similar to the argument that democratic occupation increases suicide terror,[2] our lack of empirical support suggests that considerable cross-national work is still needed to understand suicide terror adequately. We suggest some reasons why this may be the case, drawing particular attention to the problem of overgeneralizing from a limited set of cases.

Keywords armed conflict, civil war, outbidding, political violence, terrorism

Introduction

Using terrorism to build support and advertise against domestic rivals, an act termed outbidding, is a claim that has received a considerable amount of attention in recent scholarship as well as policy circles.[3] Kydd and Walter suggest that insurgent groups who initially compete for popular support using means other than terrorism could resort to terrorism as a way of trying to attract more supporters.[4] Bloom further states: "[M]ost suicide terrorism...is perpetrated by insurgent opposition groups struggling against an established and much more powerful state" and outbidding

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is a process that occurs when group competition for public support provides "incentives for further groups to jump on the 'suicide bandwagon' and ramp up the violence in order to distinguish themselves from the other organizations."[5]

While support for outbidding in the context of terrorism and suicide terrorism has been found using limited case-study evidence, we lack cross-national evidence to support a general outbidding logic. In this article, we investigate how general terrorism and suicide terrorism are influenced by outbidding theoretically and empirically. The logic underlying outbidding has generated substantial interest in recent years. It is an intuitive idea and has precedent in the ethnic conflict literature, which claims that ethnic groups make increasingly extreme appeals in order to attract supporters.[6] Scholars have developed the idea of outbidding in the context of suicide attacks and terrorism through the examination of a variety of cases.[7] Extant works have provided useful insights and generated testable expectations. And yet, a thorough, cross-national time-series test of outbidding has not been undertaken.

A common theme in studies of outbidding is that multi-party conflicts are the context in which we should expect outbidding to occur. The logic suggests that in multi-party conflicts, each group needs to differentiate itself from others in order to attract supporters. Accordingly, where more insurgent groups engage in armed conflict with the state, we should expect more suicide terrorism and perhaps more terrorism. In this article, we test a general outbidding logic that captures core features in many outbidding arguments, with an emphasis on the relationship between the number of actors and terrorist violence.

We begin by using statistical analysis on all countries from 1970–2004, regardless of whether an armed conflict occurred, to test whether outbidding increases the incidence of suicide terrorism. Given the emphasis on competing insurgent groups and "later iterations" of conflict, we then narrow the focus to all countries engaged in armed conflict and test whether outbidding in this context makes suicide terrorism more likely. Furthermore, we investigate whether a logic of outbidding applies to terrorism generally. We use multiple measures of terrorism, multiple measures of the number of insurgent groups potentially engaged in outbidding, and a variety of statistical estimation techniques to evaluate these expectations.

We find scant support for the idea that the number of insurgent groups increases the likelihood of suicide terror and no support for the notion that outbidding increases terrorism generally. The association exists under a very limited set of circumstances, usually when no control variables are present or when a less appropriate statistical estimator is used. These relationships are weakest, furthermore, in the context of armed conflict, which is when an outbidding logic should be most applicable. The relationship appears to hold in Israel, when testing for country-specific effects, but calls into question the practice of generalizing extensively from a limited set of cases.

The Logic of Outbidding

Recent scholarly work contends that terrorism is a formal tactic of groups that serves several purposes including: increasing support for insurgent groups,[8] fighting in contested regions of a country,[9] targeting democratic occupiers of a country,[10] or as a part of religious war.[11] Insurgent groups contending against a state typically want to establish a new state, take over an existing government, or at least secure some policy concessions, such as greater regional autonomy. Whether they are interested in seceding to establish a new government or attempting to overthrow

the existing government, in some sense the goal is the same: the opposition groups seek more extensive control over, or greater support from, the population. The insurgent groups might be active combatants or they could be emerging movements trying to garner enough support to shift from a popular movement to an organized fighting force. Strength, then, for an insurgent organization, is increased through acquiring popular support. Terrorism is one among a variety of means that insurgent groups can use to obtain greater popular support.

The number of groups vying for public support affects each group's choice to use violence against the government. As Bloom succinctly states, "[w]hen there is a multiplicity of actors and insurgent groups, outbidding becomes more likely...."[12] Thus, as the number of insurgent groups increases, and each group needs to differentiate itself to obtain support from a finite population, the smaller the shares of resources and support there will be for each group. According to an outbidding logic, the consequence of this competition is that the groups might try to use increasingly spectacular tactics in order to attract more support. Bloom argues that groups adopt more extreme tactics in an attempt to outbid each other: "the outbidding is directed toward the domestic population who sponsor, join, support, or 'vote' for these organizations."[13] Thus, a testable implication is:

> *Expectation 1: The greater the number of opposition groups, the more likely suicide terrorism will be in armed conflict.*

More generally, groups might use more extreme tactics beyond guerrilla warfare, such as other types of terrorism including hijacking. Kydd and Walter contend that one of the primary strategies of terrorism generally is outbidding and that when multiple groups are vying for support, outbidding is likely to lead to terrorism.[14] Insurgents might attempt to become more extreme by increasing the use of violence against civilians rather than against military targets. While outbidding explanations have been applied most prominently to suicide terrorism, as Kydd and Walter argue, the basic logic arguably applies to other contexts as well. This suggests the following expectation:

> *Expectation 2: The greater the number of opposition groups, the more likely any terrorist acts will occur during armed conflict.*

We also note that some have argued that outbidding should only apply under certain circumstances. Bloom, in particular, claims that within the context of suicide bombings, certain factors may mediate the effect. The limitations that Bloom directly engages relates to the factors that increase support for this violent tactic. As Bloom states, "[s]uicide bombing works when it pays. In the war for public support, when the bombings resonate positively with the population that the insurgent groups purport to represent, they help the organization mobilize support."[15] This quote from Bloom's theoretical argument suggests that suicide bombings are more likely to be frequent or recurrent when the public supports them. Public support, for Bloom, is influenced when the group using violence is different from the targets of the violence. According to Bloom "[t]argeting the other side is easier when its members are of a different race, ethnicity, religion, or nation."[16] Sri Lanka and Palestine are notable examples she cites to support this claim. We thus expect:

Expectation 3: Outbidding is more likely to occur when combatants face ethnic or cultural differences, especially as the number of actors increases.

The Setup of a Cross-National Test

We use two different measures of terrorism to evaluate Expectation 1. First, we employ a measure of yearly suicide attacks from Wade and Reiter,[17] which is based on Pape and Pedazhur.[18] Second, we use data on terror events from the Global Terrorism Database (GTD) from 1970–2004, which closely matches our terrorism definition.[19] This measure of terrorism needs to be accompanied by some caveats. According to LaFree and Dugan,[20] most of the data were coded as terrorist incidents if they "substantially concur with the definition." Thus, the measurement is largely consistent with the operationalization, but leaves open a subjective element in the coding process. Each incident also required only a single source to be coded, whereas it might be desirable to cross-check each source as Pape does.[21] Despite possible concerns in the measurement and coding process, these data provide a useful means to test the expectations set forth above.

The GTD data from 1998–2004 were coded differently from the earlier data; we pool both sets of data in our primary analyses, but we also separate them in subsequent tests to be careful about any potential threats to valid inferences. The number of suicide attacks is much smaller than total terrorist attacks, but in both cases substantial periods exist where no terrorism occurs at all. The GTD contains data both on domestic and transnational attacks. Because we are most interested in civil wars, the domestic terrorism data are appropriate for our purposes. Many armed conflicts become internationalized, however, and so transnational terrorism data are applicable as well. When using subsets of the data that make distinctions between domestic and transnational data, furthermore, the results are qualitatively similar.[22]

We begin by examining two temporal domains in which suicide terrorism could occur. First, we examine all years between 1970–2004 regardless of whether an armed conflict was occurring. The unit of analysis for these tests is the country-year because data do not exist at a more granular temporal level for the entire time period. Second, we also examine terrorist events that occurred in countries involved in at least minor armed internal conflict as defined by Gleditsch et al.[23] and used by Cunningham.[24] We chose Gleditsch et al.'s operational definition not because of the precise death threshold[25] but because it best represents the condition of underlying violent contention between state and dissidents.

The unit of analysis in the armed conflict analyses is the country-month, which warrants some discussion. Ideally, the armed conflict-month would be the unit of analysis, because multiple armed conflicts could be ongoing in a given country at the same time. The terrorism data are extremely difficult to disaggregate by armed conflict, however, which necessitates using all of the data within the country during the time the armed conflict is ongoing. This is potentially a drawback, but is justifiable on theoretical and empirical grounds. In addition to insurgents actively involved in armed conflict, other weaker movements might use terror as a way of increasing their support in order to participate more fully in the conflict. These emerging groups might not be considered active insurgent groups at the time they use terrorism and they could operate in various parts of the country, but they still may be motivated by factors occurring within the conflict zone. If we confined our attention only to established rebel groups, or only to events occurring in conflict regions, then

there is the potential of missing a significant portion of terrorist behavior. The Moscow theater incident, in which 120 hostages died, as well as the school hostage attack in Beslan Russia that left more than 300 people dead, most of them children, are examples of the types of cases that would be excluded from an analysis that only focused on events occurring within the conflict zone (i.e., Chechnya). By a logic similar to Kalyvas,[26] regions in which violence are not occurring might still be important to the armed conflict; they could be regions of incumbent or insurgent control, rather than contested regions where much of the bilateral violence is likely to be observed.

Based on a number of studies of outbidding, a critical component is the number of actors engaged in competition for popular support.[27] As such, we use three alternative measures to establish whether there is a relationship: the number of terrorist groups based on the GTD, the number of veto players during armed conflict as defined by Cunningham,[28] and the number of actors from the Uppsala Database.[29] We obtained the number of terrorist groups from the GTD by identifying terrorist events in which a group is identified as a perpetrator. This approach is not perfect because perpetrators are often not identified. Thus, the actual number of terrorist groups differs from the measure we obtain. Nonetheless, there is substantial variation on this measure and it captures most of the primary terrorist organizations as well as numerous smaller ones. The key drawback to using the GTD is that measuring the number of groups from the GTD likely biases in favor of finding positive results because the set of actors is already a set of known terrorist groups who have committed at least one terrorist attack already. Thus, this must be taken into account when interpreting the results.

In addition to beginning with a set of known terrorist groups, we also consider known insurgent groups that might use a range of tactics, such as guerrilla warfare and terrorism. They may use such terrorism, and perhaps suicide terrorism, in order to outbid each other for popular support. We use two measures of combatant groups during armed conflict to test for this. First, we use a measure of whether an actor is a ''lenient veto player'' (as defined by Cunningham) that has a sufficient organizational structure and capacity to affect the dynamics of armed conflicts.[30] The logic of outbidding suggests that weaker groups need to outbid in order to generate more support and so we use a lenient measure of veto players that might have more variability in the number of actors. Also, we use a measure of actors from the Uppsala database that has a higher number of actors on average than the veto player measure. Note that the veto player and Uppsala actors measures are coded for each civil conflict not country. As such, we collapsed the number of actors by country so that we examine the ''maximum'' number of actors in a given country and time period.[31]

Because the dependent variables are counts of suicide terrorist events and any terrorist events respectively, the appropriate estimator is a count model. There is considerable variance in the number of terrorist events over the years and months in the samples, which indicates that a negative binomial model, rather than a poisson, be estimated. The data also contain many years and months with no terrorism at all, however, which requires an additional step in the analysis. Because of the presence of so many observations in which no terrorism occurs, a zero-inflated negative binomial (ZINB) is the most appropriate statistical technique. We estimate both negative binomial and zero-inflated negative binomial models and the results are almost always the same. For ease of interpretation, we primarily report the negative binomial results, but report the qualitative results for the ZINB (''Yes'' if expected sign and statistically significant; ''No'' otherwise). Because suicide terrorism is a

fairly rare event, like Wade and Reiter[32] we also estimate rare-events logit models on a dichotomized dependent variable capturing whether any suicide terror occurred in a given time period.

We address outbidding under a wide variety of conditions to understand whether a relationship exists and, if so, how robust it is. Although we control for a number of factors, we primarily report the results on our different measures of actors (given different samples and measures of terrorism). In the results section, we are mostly interested in whether there is a positive and statistically significant relationship and tailor the discussion to this effect. Full tables with all of our analyses including control variables are available upon request.

Testing the Outbidding Logic

As a first step, we estimate a model of suicide terrorism, similar to Wade and Reiter's[33] model including a measure of the number of terrorist groups based on the GTD. The results appear in Table 1. Although precise estimates from the original model change, these results are qualitatively similar to theirs. Notably, however, the measure of the number of groups is not statistically significant at standard levels. The p-value is 0.108, which approaches what some consider an acceptable level of statistical significance, but recall that this measure should be biased in favor of a positive and statistically significant result as it begins with a set of known terrorist groups, which have already committed some terrorist attacks. Recall too, that this analysis is based on the entire set of country years, which may not be most appropriate, as most have suggested outbidding is likely to occur during periods of conflict. Thus, this analysis provides some initial insights and context, but we need more evidence to support or refute Expectation 1.

Table 1. GTD actors and suicide terror

Variable	Coefficient	(Standard error)
Number of groups	0.086	(0.053)
Partly free	2.031**	(0.714)
Not free	1.240	(0.786)
Energy/capita	0.236	(0.173)
Population	0.500**	(0.157)
Islam	0.816†	(0.465)
Past attracts (country)	2.552**	(0.890)
Past attracts (global count)	0.004*	(0.002)
Partly free × minorities	−0.020	(0.137)
Not free × minorities	−0.423*	(0.184)
Minorities	0.176	(0.112)
Regime durability	0.014*	(0.007)
Intercept	−12.009*	(1.756)
N	3607	
Log-likelihood	−343.536	
$\chi^2_{(12)}$	388.173	

Significance levels: †: 10%, *: 5%, **: 1%.

Table 2. The relationship between outbidding and suicide terrorism

Covariate	Statistics	Suic. terr.	No controls	1970–1997 Controls/none	1998–2004 Controls/none	RE-logit	ZINB count/inflate
GTD actors (1970–2004)	Coef	0.086	Yes	No/Yes	No/Yes	Yes	No/No
	S.E.	0.053					
	p value	.108					
	N	3607					
GTD actors (conflict years)	Coef	0.018	Yes	No/No	No/Yes	Yes	No/Yes
	S.E.	0.024					
	p value	.460					
	N	719					
Lenient veto players (conflict years)	Coef	− 0.361	No	No/No	†/No	No	No/No†
	S.E.	0.503					
	p value	.473					
	N	719					
Uppsala actors (conflict years)	Coef	− 0.630	No	No/No	No/No	No	No/No†
	S.E.	0.347					
	p value	.070					
	N	683					

The four right columns ask whether there is a positive and statistically significant relationship. The controls are the same as in Wade/Reiter 2007, Table 2, but we do not report them here.
† = Will not converge with control variables.

We now consider additional specifications to uncover under which conditions, if any, an outbidding logic holds. The results of these additional analyses are reported in Table 2. The table contains information about (approximately) 35 separate analyses.[34] Consider first only the column, "Suic. terr.," and the first row, "GTD actors (1970–2004)," which give the results for the number of actors measures. The coefficient, standard errors, p-values, and number of observations are reported first for GTD terrorist actors in the row titled "GTD actors (1970–2004)." These statistics are identical to those for the "Number of groups" measure in Table 1. In the five columns on the right of the reported statistics, we address whether additional analyses had a positive and statistically significant relationship with increases in suicide terrorism by reporting "Yes" or "No." Among the additional specifications, we first examine the basic outbidding relationship without controls (Column: "No controls"). As noted, because we pooled data that were collected differently, we then examined the 1970–1997 period only with and without controls (Column: "1970–1997 Controls/none") and, separately, the 1998–2004 period only with and without controls (Column: "1998–2004 Controls/none"). We also considered a rare-events logit analysis (Column: "RE-logit") and finally in a zero-inflated negative binomial

reporting whether the count and inflate equations indicate that the number of actors increased the frequency and likelihood of terrorism (Column: "ZINB count/inflate"). Full results for the RE-logit and ZINB are located in Tables 5 and 6.

The results of these additional analyses offer very limited and qualified support for Expectation 1. The additional results in the first row, "GTD actors (1970–2004)," are not significant with the full set of control variables from Wade and Reiter,[35] but they are significant in some of the bivariate analyses of suicide terrorism between 1970–1997 and 1998–2004. The results in the rare-events logit specification with the full set of control variables does support Expectation 1, although this measure lacks the full information about the number of attacks contained in the negative binomial models. A ZINB is arguably the most appropriate statistical technique, but the results of the ZINB do not support a logic of outbidding. The full rare-events logit and zero-inflated negative binomial results are reported in Tables 5 and 6.

We note that even the results that support Expectation 1 might reflect a correlation that is an artifact of the data. Although the suicide terrorism measure is not derived from the number of groups measure, it is likely that the more groups there are in a country that have already engaged in some terrorism, the more likely it is that there will be at least some that use suicide terrorism. That is, outbidding might not be occurring; it might just be that with a large number of groups using a variety of tactics, suicide terrorism—like all other tactics—is likely to occur. Because the rare-events logit and the inflate portion of the ZINB are based on a dichotomized dependent variable, they are only picking up whether suicide terrorism has been used at least once. Thus, it is possible that the relationship is spurious even in the limited cases in which a modest correlation exists.

Now consider the second, third, and fourth rows, which are based on armed conflict years only. These analyses are most crucial for establishing whether outbidding affects suicide terrorism, because they address insurgent groups explicitly and most closely approximate what Bloom calls the "second iteration...of conflict."[36] We report the results for the number of GTD actors during ongoing armed conflicts in the row titled "GTD actors (conflict years)." Next, we report the same tests, but with the "Lenient veto player (conflict years)" measure during armed conflict years between 1970–1997. Finally, we examine the results for the number of actors from the Uppsala Database in the row titled "Uppsala actors (conflict years)."

The results of the three additional sets of analyses likewise offer almost no support for Expectation 1. Like the full set of country years, the relationship between GTD actors and suicide terrorism during armed conflict years holds primarily in the bivariate and rare-events logit cases. Notably, the relationship holds in the inflate portion of the ZINB model, which is understandable because the inflate portion dichotomizes and estimates a model similar to a logit. Although not identical to the RE-logit, these analyses are fairly similar. The rest of the estimated relationships (rows 3 and 4) produce results that are either positive but not statistically significant or in some cases negative and statistically significant. For example, the number of Uppsala actors is negatively related (and statistically significant) to suicide terrorism using the full set of Wade and Reiter control variables.[37]

Figure 1 illustrates percent changes in the number of actor variable for each of the variations presented in Tables 2 and 3. While the results of the analyses are generally not significant or in the opposite direction, this figure further confirms that any outbidding effect is likely to be weakly positive or strongly negative substantively.

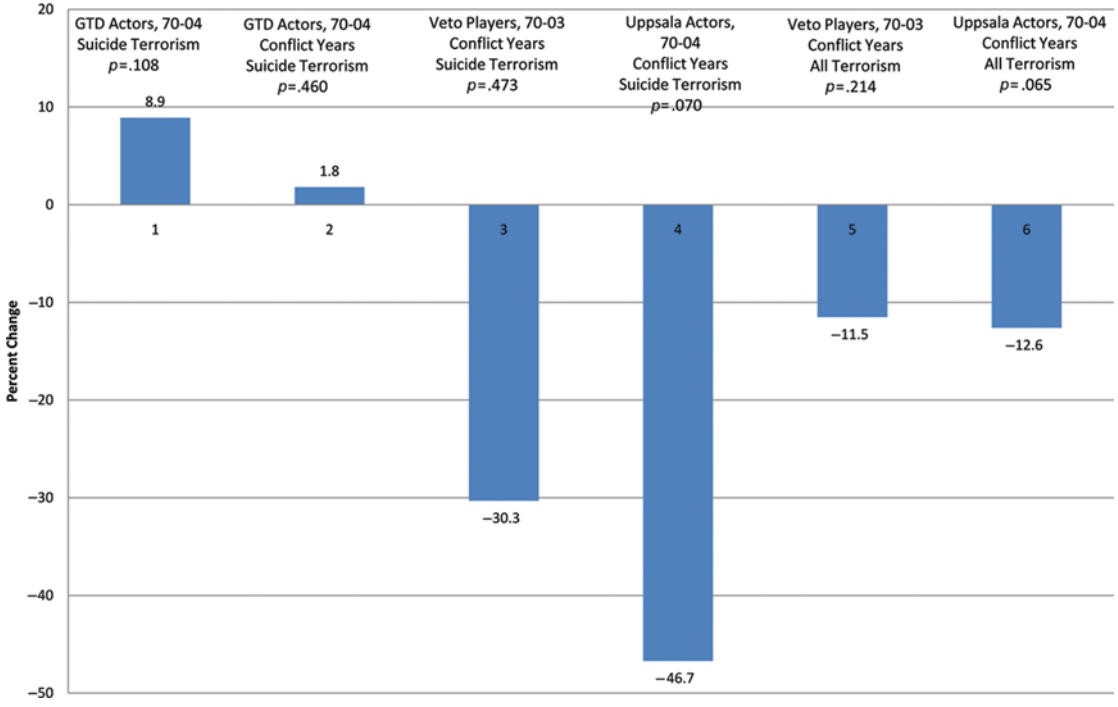

Figure 1. Substantive effects of each "number of actors" specification (color figure available online).

Table 3. The relationship between outbidding and any terrorism

Covariate	Statistics	All terrorism	No controls	1970–1997 Control/ none	1998–2004 Control/ none	ZINB count/ inflate
Lenient vetos (1970–2004)	Coef	−0.122	No	No/No	No/No	No/No
	S.E.	0.098				
	p value	.214				
	N	8396				
Uppsala actors (conflict years)	Coef	−0.315	Yes	No/No	No/No	No/No
	S.E.	0.073				
	p value	.065				
	N	7603				

The three right columns ask whether there is a positive and statistically significant relationship.
Control variables include: state capabilities, democracy lagged, democracy squared and lagged; GDP per capita, and whether the armed conflict was ethnically based.

Our primary goal has been to evaluate a logic of outbidding as it applies to suicide terrorism. The results of our analysis offer little support overall. Few of the statistical results are strong, suggesting that outbidding is likely only in some limited cases but not others. Numerous counter examples exist: Colombia, the Democratic Republic of the Congo, Lebanon in the 1980s, and Oman in the 1970s. In these cases, suicide terrorism did not occur in the context of armed conflict where many insurgent groups vied for support from the population in their attempts to challenge the state. It is also possible that some other factor is correlated with outbidding (but unvarying) in the few cases where outbidding appears to be connected to suicide terrorism. The implication from Pape is that democratic occupation is explaining the use of suicide terrorism,[38] although recent evidence challenges this explanation as well.

Although it appears that there is not a strong relationship between outbidding and suicide terrorism, we also noted above that outbidding might occur in the use of terrorism more generally.[39] We investigate this possibility now. Table 3 shows the results from 16 additional analyses in which GTD terrorist events are the dependent variable (rather than suicide terrorism). This table differs in two ways from Table 2. First, we do not estimate the number of GTD actors on GTD terrorist events. Estimating this would be problematic, because the number of GTD actors is derived from the terrorist events themselves. Instead, we use the measures of veto players and Uppsala actors and report those results here. Second, we do not estimate rare-events logit models in these cases because, although terrorism occurs a minority of the time, terrorism is nonetheless common enough that it is not considered a rare event.

Like most of the results discussed above, the results of these additional analyses do not offer support for Expectation 2. Interestingly, in both the ''Lenient veto players'' and ''Uppsala actors'' cases, the number of actors has a negative relationship and in some analyses the relationship is statistically significant. The results offer little support for a relationship between the number of groups and the likelihood of terrorism generally. And these results mostly fit with the results for suicide terrorism,

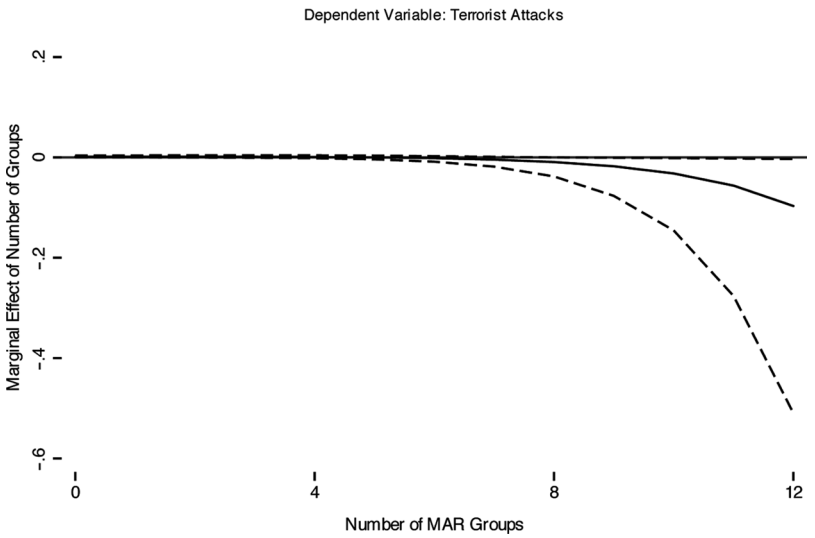

Figure 2. Marginal effect of number of groups on terrorist attacks as number of MAR groups changes.

casting doubt that outbidding is an encompassing explanation for suicide terrorism or any terrorism.

Finally, to consider Expectation 3, we conduct three additional tests. First, we use a control for minority groups with cultural differences.[40] As Bloom suggests, terrorism may only work as an outbidding strategy when it resonates with the public. To capture this argument, we try several approaches. First, we control for the number of minorities at risk along with our number of violent actors measures. It is possible that as the number of distinct minorities increase the more likely it will be that terrorism will be used against a group that is ethnically or religiously distinct and thus is more likely to be supported by the relevant ethnic group the terrorist organization is hoping to represent.[41] Once controlled for, this may alter the effect of the number of actors on terrorism. To better test this idea though, we interact the two measures to see if the number of groups increases terrorism only as the number of distinct ethnic groups increases (see Figure 2). As the figure shows, as the number of MAR groups increase the effect that the number of actors has on the frequency of terrorist attacks actually decreases. Where few MAR groups are present (left-hand side of Figure 2) in society, the number of actors have a small positive and insignificant effect on the number of terrorist attacks. Only at the highest numbers of MAR does the impact reach statistical significance, but at this level more groups lead to less terrorism.

While this a rough proxy, we try a second approach that controls for civil conflicts that are known to have a strong ethnic component.[42] The logic behind incorporating an ethnic conflict measure is similar to the cultural differences variable. Finally, we interact both of these variables with the number of insurgent groups to understand whether there is some conditional, multiplicative effect (see Table 4). As Table 4 shows, the interaction term between the number of actors in a conflict (measured two separate ways) and the presence of ethnic conflict is positive but not significant. Adding the

Table 4. MAR, ethnic conflict, and number of groups on terrorism

	Model 1	Model 2	Model 3	Model 4
Lenient vetos	−0.093		−0.189	
	(0.091)		(0.132)	
Uppsala actors		−0.093		−0.163
		(0.070)		(0.118)
Ethnic conflict	−1.600**	−1.556**	−2.333*	−2.026*
	(0.334)	(0.336)	(0.720)	(0.629)
Lenient veto × ethnic conflict			0.249	
			(0.184)	
Uppsala actors × ethnic conflict				0.147
				(0.132)
AIC	34918	32517	34875	32494
BIC	34975	32572	34938	32556

Significance levels: †: 10%, *: 5%, **: 1%.

coefficients for the veto players and the interaction term suggest that the net effect is slightly positive but the confidence interval around this estimate includes zero.

It is unclear whether the logic of outbidding applies to the onset, duration, frequency, or severity of suicide attacks. We nonetheless wanted to consider whether outbidding increases the onset of suicide terrorism or terrorism generally. Using rare-events logit, the measure of the number of actors from the GTD is positively and significantly related to the onset of suicide terror, which is consistent with what we find above. But the rare-events logit model using the "lenient vetos" and "Uppsala actors" variables are not significant, also consistent with what we identified above. This offers some support for an outbidding logic, but it needs to be interpreted with

Table 5. RE-Logit: GTD actors and suicide terror

Variable	Coefficient	(Standard error)
Number of groups	0.088**	(0.032)
Partly free	1.042†	(0.633)
Not free	0.561	(0.587)
Energy/capita	0.366**	(0.137)
Population	0.519**	(0.168)
Islam	1.017**	(0.363)
Past attracts (country)	2.826**	(0.906)
Past attracts (global count)	0.005**	(0.002)
Partly free × minorities	−0.014	(0.133)
Not free × minorities	−0.137	(0.156)
Minorities	0.068	(0.125)
Regime durability	0.009†	(0.005)
Intercept	−11.813**	(1.852)
N	3607	

Significance levels: †: 10%, *: 5%, **: 1%.

Table 6. GTD actors and suicide terror

Variable	Coefficient	(Standard error)
Equation 1: Count		
Number of groups	−0.039	(0.028)
Partly free	1.375	(1.989)
Not free	−0.170	(1.383)
Energy/capita	0.144	(0.496)
Population	0.167	(0.171)
Islam	−0.361	(0.711)
Past attracts (country)	0.737**	(0.137)
Past attracts (global count)	0.001	(0.002)
Partly free × minorities	−0.168	(0.376)
Not free × minorities	−0.323†	(0.169)
Minorities	0.168	(0.247)
Regime durability	−0.001	(0.003)
Intercept	−2.727*	(1.245)
Equation 2: Inflate		
Number of groups	−0.045	(0.099)
Partly free	−1.683	(3.597)
Not free	−2.741	(2.344)
Energy/capita	−0.345	(1.213)
Population	−1.671*	(0.796)
Islam	−0.741	(1.585)
Past attracts (country)	−102.682*	(41.597)
Past attracts (global count)	−0.020*	(0.008)
Partly free × minorities	−0.689	(0.532)
Not free × minorities	0.498	(0.910)
Minorities	1.364*	(0.557)
Regime durability	−0.020	(0.018)
Intercept	29.747**	(11.288)
N	3607	
Log-likelihood	−232.621	
$\chi^2_{(12)}$	2270.474	

Significance levels: †: 10%, *: 5%, **: 1%.

caution. As indicated, the "number of actors" measure is based on groups that are defined by having already used terrorism. For the general terrorism results, the results are also consistent with what we found above and do not indicate that outbidding increases terrorism.

Finally, we also controlled for a different measure of intensity and find that the results are qualitatively similar to those reported above. Using both a measure of months engaged in armed conflict as well as a measure of intensity from the Uppsala Conflict Database, we find similar results. We further note that we conducted a set of tests—lags, Hausman tests, different ZINB specifications, fixed effects, country dummies for key conflicts, and multicollinearity checks—to understand whether endogeneity or model identification pose problems. None of the models offer any

more support for an outbidding logic, though we find an interesting result—that an interaction of the number of groups and Israel may have a positive effect. Thus, there may be some support for the outbidding logic in the context of Israel, an important case for many terrorism scholars.[43]

Discussion and Conclusions

In this paper we tested the logic of outbidding and terrorism, which has become a prominent argument in the recent literature on the causes and consequences of terrorism. Others have questioned outbidding explanations,[44] but our analysis represents a first attempt to quantify an outbidding explanation cross-nationally in the context of suicide terrorism and terrorism more generally. In contrast to arguments in much of the literature, we find scant evidence of an outbidding-terrorism link, which suggests a need to examine the logic of outbidding more closely.

As mentioned above, the outbidding logic, which is partially derived from studying the Israeli case, might be specific to this case. Israel is unique for many reasons, such as heavy third-party involvement in the region by major powers that may make the dynamics in Israel quite different from other cases. Future research could explore case-specific characteristics more systematically, but our results clearly suggest that the outbidding argument may not be generalizable to a wide variety of countries and conflicts. Because terrorism within and against Israel is one of the most examined contexts for political violence, this may also raise caution that other theories derived from Israel should be considered with greater caution.

It may also be the case that there are heterogeneous dynamics at work in which the number of groups increases terrorism in some countries such as Israel, but decreases it in others. Cunningham and Stanton acknowledge that having multiple rebel parties involved in civil conflict can influence civilian targeting, but claim that in multiparty conflicts, terrorism will actually be less likely as groups outbid each other for the right to be the legitimate representative of the people expressing a grievance *vis-à-vis* the state.[45]

Taken together, our findings point to the need to address the conditions under which groups proliferate and resort to suicide tactics and ordinay terrorism. As Brym and Araj argue,[46] there has been a tendency towards identifying monocausal arguments about the onset of suicide terrorism, but these efforts might be misguided. Wade and Reiter challenge the arguments and findings in Pape's work and our results call into question an outbidding logic.[47] Refining and integrating current theories is necessary to reconcile these mixed results as well as explore possible heterogeneous effects across countries, organizations, and motivations.[48] Understanding the determinants of suicide terror and terror more generally is likely more complex and will require significant future attention.

Notes

1. Mia Bloom, *Dying to Kill: The Allure of Suicide Terror* (New York: Columbia University Press, 2005); Andrew Kydd and Barbara Walter, "The Strategies of Terrorism," *International Security* 31 (2006): 49–80.

2. Robert Pape, *Dying to Win: The Strategic Logic of Suicide Terror* (New York: Random House, 2005).

3. See Bloom 2005 (note 1 above), for use of the term in relation to suicide terrorism. Also see others who have discussed the logic behind outbidding in the context of ethnic and

political conflict: Donald L. Horowitz, *Ethnic Groups in Conflict* (Berkeley: University of California Press, 1985); Robert Brym and Bader Araj, "Palestinian Suicide Bombing Revisited: A Critique of the Outbidding Thesis," *Political Science Quarterly* 123 (2008): 485–500; Radha Iyengar, *The Impact of Asymmetric Information Among Competing Insurgent Groups: Estimating an "Emboldenment" Effect* (London: Center for Economic Performance, LSE Discussion Paper No 1018, October 2010).

4. Kydd and Walter 2006 (see note 1 above).

5. Bloom 2005 (see note 1 above), 89, 94.

6. Donald Horowitz, *Ethnic Groups in Conflict* (Berkeley: University of California Press, 1985); A. Rabushka and K. Shepsle, *Politics in Plural Societies: A Theory of Democratic Instability* (Columbus, OH: Charles E. Merrill, 1972).

7. Bloom 2005 (see note 1 above); Brym and Araj 2008 (see note 3 above); Jannie Lilja, "Trapping Constituents or Winning Hearts and Minds? Rebel Strategies to Attain Constituent Support in Sri Lanka," *Terrorism and Political Violence* 21 (2009): 306–326; Michael J. Boyle, "Bargaining, Fear, and Denial: Explaining Violence Against Civilians in Iraq 2004–2007," *Terrorism and Political Violence* 21, no. 2 (2009): 261–287; Iyengar 2010 (see note 3 above).

8. Bloom 2005 (see note 1 above); Macartan Humphreys and Jeremy Weinstein, "Handling and Manhandling in Civil War," *American Political Science Review* 100 (2006): 429–447.

9. Stathis Kalyvas, *The Logic of Violence in Civil War* (Cambridge: Cambridge University Press, 2006).

10. Robert Pape, "The Strategic Logic of Suicide Terrorism," *American Political Science Review* 97 (2003): 343–361; Pape 2005 (see note 2 above).

11. Mark Juergensmeyer, *Terror in the Mind of God* (Berkeley: University of California Press, 2001).

12. Bloom 2005 (see note 1 above), 95.

13. Bloom 2005 (see note 1 above), 96.

14. Kydd and Walter 2006 (see note 1 above).

15. Bloom 2005 (see note 1 above), 78.

16. Ibid, 79.

17. Sara Jackson Wade and Dan Reiter, "Does Democracy Matter?: Regime Type and Suicide Terrorism," *Journal of Conflict Resolution* 51 (2007): 329.

18. Pape 2003 (see note 10 above); Pape 2005 (see note 2 above); Ami Pedahzur, *Suicide Terrorism* (Malden, MA: Polity, 2005).

19. Gary LaFree and Laura Dugan, "Introducing the Global Terrorism Database," *Terrorism and Political Violence* 19, no. 2 (2007): 181–204. The GTD defines terrorism as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious or social goal through fear, coercion or intimidation" (184).

20. LaFree and Dugan 2007 (see note 19 above).

21. Pape 2005 (see note 2 above).

22. Michael Findley and Joseph K. Young, "Terrorism, Democracy, and Credible Commitments," *International Studies Quarterly 55*, no. 2, (2011): 357–378. One drawback of the GTD is that the data for 1993 were lost. Unfortunately, no other data exist on domestic and transnational terrorism across countries and over an extended period of time. Because of this, we analyze the model using the GTD, but without the 1993 data.

23. Nils Petter Gleditsch, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg, and Havard Strand, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research* 39 (2002): 615–637.

24. David Cunningham, "Veto Players and Civil War Duration," *American Journal of Political Science* 50 (2006): 875–892.

25. Gleditsch et al. 2002 (see note 21 above).

26. Kalyvas 2006 (see note 9 above), 88.

27. See the following for the common theme of multiple actors: Horowitz 1985 (see note 3 above); Bloom 2005 (see note 1 above); Brym and Araj 2008 (see note 3 above); Iyengar 2010 (see note 3 above); Hanne Fjelde and Lisa Hultman, "Weakening Your Enemy: Constituencies and the Location of Violence against Civilians in Africa, 1989–2006," Unpublished Manuscript, Uppsala University (2010).

28. Cunningham 2006 (see note 24 above).

29. Uppsala Conflict Data Program, Uppsala Conflict Database, http://www.pcr.uu.se/database.

30. Cunningham 2006 (see note 24 above).

31. We also summed the number of actors across wars and found qualitatively similar results, but do not report the results in this article. These results are available upon request.

32. Wade and Reiter 2007 (see note 17 above).

33. Ibid.

34. A couple of the analyses did not "converge" as specified. Lack of convergence occurred most often in the zero-inflated negative binomial models, which were based on the full set of Wade and Reiter control variables. Wade and Reiter 2007 (see note 17 above).

35. Wade and Reiter 2007 (see note 17 above).

36. Bloom 2005 (see note 1 above), 89.

37. Wade and Reiter 2007 (see note 17 above).

38. Pape 2003 (see note 10 above); Pape 2005 (see note 2 above).

39. Kydd and Walter 2006 (see note 1 above).

40. Wade and Reiter 2007 (see note 17 above).

41. Jeff Goodwin, "A Theory of Categorical Terrorism," *Social Forces* 84 (2006): 2027–2046.

42. Based on the ethnic conflict measure in Cunningham 2006 (see note 24 above).

43. Complete tables and results available upon request.

44. Brym and Araj 2008 (see note 3 above).

45. David E. Cunningham and Jessica Stanton, "Strategies of Violence," Paper presented at the Annual Meeting of the International Studies Association, New York, 2009.

46. Brym and Araj 2008 (see note 3 above).

47. Wade and Reiter 2007 (see note 17 above); Pape 2003 (see note 10 above); Pape 2005 (see note 2 above); Bloom 2005 (see note 1 above); Kydd and Walter 2006 (see note 1 above).

48. For additional important factors that may need to be integrated, see James A. Piazza, "A Supply-Side View of Suicide Terrorism: A Cross-National Study," *The Journal of Politics* 70 (2008): 28–39.