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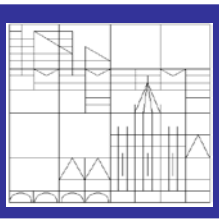

Suicide Attacks and Religious Cleavages

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Suicide Attacks and Religious Cleavages

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Abstract

Many experts claim that the incidence of suicide attacks is driven by religious cleavages. To test this hypothesis, we investigate whether the total number of suicide attacks per violent conflict or the annual number of suicide attacks per country is associated with simmering religious conflicts. We distinguish between two kinds of religious cleavages: cleavages at the macro level between the stake holders in violent conflicts and cleavages at the micro or battle field level between the actual perpetrators and victims of suicide attacks. Our results do not indicate that religious cleavages are an important precondition for the incidence of suicide attacks.

JEL Classification: Z12, D74, H56, F51

Keywords: suicide terrorism, religion, religious cleavages, club goods

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1. Introduction

The declared intention to die in order to kill others turns a suicide attacker into a powerful, highly dangerous, and utterly unpredictable weapon. Not only are suicide attacks more expedient than other forms of terrorism, they also require fewer resources and less preparation than traditional means of combat.[4] In some conflicts, suicide attacks have therefore become an effective strategy; in Iraq, for example, they have caused 19% of all civilian victims between 2003 and 2010 (26% of injured civilians and 11% of civilian deaths).[5] In most other violent conflicts, suicide terrorism does however hardly influence the run of events. The major political concern in these countries relates to the collateral damage caused by the countermeasures that are liable to undermine the foundations of free societies.

The purpose of this study is to investigate whether the incidence of suicide attacks are driven by religious cleavages. Apart, perhaps, from the hypothesis that suicide attacks are provoked by democratic states occupying foreign territories, the most prominent hypothesis advocated in the literature is that suicide terrorism has religious roots.

Some experts have conjectured that Muslim fundamentalism is the root cause of suicide attacks. Israeli (2002) is a case in point. He argues that suicide terrorists like to think of themselves as defenders of occupied Muslim territories who rescue Islam from evil westernization. Berman and Laitin (2008), on the other hand, find that suicide terrorists are not primarily motivated by religious concerns. Even though suicide attackers often are members of radical religious sects, a fact that has been confirmed in a recent empirical study by Santifort-Jordan and Sandler (2014), Berman and Laitin argue that it is not the religious

[4] The first suicide attacks in modern conflicts were carried out in the Israeli occupied South Lebanon by the terrorist organization Hezbollah in 1982. Afterwards the incidence rate of suicide attacks quickly increased from an average of three attacks per year in the 1980's to about ten per year in the1990's and approximately 200 per year in the first decade of the second millennium (Chicago Project on Security and Terrorism database).

[5] See Hsiao-Rei Hicks et al. (2011).

fervor that drives suicide attacks but rather the ability of closely-knit sects to protect their high-stake attacks against defection.[6] In this view, the affiliation of suicide terrorists with radical religious sects is not a signal of religious delusion but of commitment to the organization whose objectives transcend its theological foundations.

Other experts, for example Bloom (2005) and Pape (2005), also argue that suicide attackers are not necessarily Muslim fundamentalists or, for that matter, any other kind of religious fanatics. In the view of these authors, suicide terrorism is not fueled by religion per se but rather by religious cleavages between attackers and victims. Pape (2005), in particular, puts forward an innovative, though highly controversial argument.[7] He contends that all suicide terrorists share the secular and strategic goal of compelling democracies to withdraw military forces from territory that the terrorists consider to be their homeland. According to Pape, this kind of nationalism gives rise to rebellion which, in turn, engenders suicide attacks. To accomplish their strategic goal, terrorist organizations use religious cleavages as a tactical device. If the foreign occupier and the local community have different religious affiliations, terrorists have an easy job of uniting their constituency by portraying the conflict as a zero-sum situation, demonizing the opponent, and grant the suicide terrorists the status of martyrs.[8]

[6] Pittel and Rübbelke (2006) show in a theoretical study how individual terrorists are led to develop a strong feeling of belongingness to the organization which then directs them towards committing suicide attacks. The benefits associated with belonging to a terrorist organization are, of course, likely to be outbalanced by the cost of the attack. Under which circumstances the decision to commit a suicide attack is time-inconsistent and what mechanisms might prevent time-inconsistency is analyzed in Pittel and Rübbelke (2012).

[7] See Bloom (2005), Cook (2007), Wade and Reiter (2007), Piazza (2008), and Collard-Wexler et al. (2013) for extensions and critical assessments of Pape's theory.

[8] See Pape (2005: 89-92) for a detailed discussion.

These early studies on suicide terrorism yielded interesting insights into the driving forces of suicide terrorism, but they lack a firm empirical basis. The well received study by Abadie (2006) constitutes an exception. In a cross-country regression analysis, Abadie (2006) does not find any relationship between religious fractionalization and risk from terrorist attacks at the country level. In our study we also use macro units of analysis, i.e. entire countries and violent conflicts. We do, however, explore a special type of terrorist attacks, namely suicide terrorism, and employ two different concepts of religious cleavages: the traditional macro concept that associates the conflict parties with religious creeds, and a new micro concept that identifies religious cleavages with the help of religious beliefs held by the directly involved parties, the terrorist organization and its victims.

Just as Abadie (2006), we do not find a statistically robust relationship between religious cleavages and the incidence of suicide attacks, neither at the country level nor at the level of violent conflicts. In other words, suicide terror attacks are often targeted at coreligionists. We interpret this result to indicate that terrorist organizations, whether they are rooted in radical religious sects or not, do not content themselves with providing club goods to their members if market mechanisms fail and the established government institutions do not succeed in satisfying the perceived needs of the population. On the contrary, terrorist organizations compete with the established order by increasing the government's cost of conducting its core tasks. By destabilizing the public order and the state capacity in general, the terrorist organizations aim at increasing their influence over the local population with the ultimate objective of superseding the government. This objective can only be reached if the terrorist organizations wreak havoc among the population that is still under the control of the government. Whereas the earlier literature argued that suicide attacks are predominantly used against hard targets, i.e. targets protected by strong and well functioning state authorities that are often supported by foreign military personnel, we propose that when state capacity is

lacking, suicide attacks are targeted against the population at large with the explicit intent to terrorize and even kill coreligionists.

We also deviate from the related literature by using a different method of identifying potential centers of conflict. In particular, we do not rely on the *Minorities at Risk Project* which is commonly used to identify the countries in which suicide attacks are likely to occur (see, for example, Pape 2005, Wade and Reiter 2007). Because many hard-pressed minorities never consider violence to be a suitable method of alleviating their predicament, the non-occurrence of suicide attacks in the home countries of these minorities would bias our estimates of the determinants of suicide attacks. We therefore rather rely on the *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al. (2002) to identify the centers of conflict which are likely to give rise to suicide attacks. One of the advantages of our approach that focuses on already existing conflicts is that by simply relying on the *Minorities at Risk* database to select the relevant cases excludes foreign military interventions such as the US interventions in Afghanistan or Iraq. These conflicts began to suffer from a large number of suicide attacks when the US became involved, whereas before the US involvement, the attackers did not use this warfare tactic.

The second novelty of our study concerns the main explanatory variable, i.e. the religious cleavage. We use two different methods to identify religious cleavages. First, we adopt Lindberg's (2008) coding of the religious affiliation of all conflict parties indexed in the *UCDP/PRIO Armed Conflict Dataset.* Second, we compiled for all suicide attacks indexed by the *Chicago Project on Security and Terrorism* (CPOST) the religious affiliations of the suicide terrorists and their respective victims.[9] We contend that these new measures of

[9] This measure of the religious cleavage is motivated by Berman and Laitin's (2008) finding that almost 90% of the suicide attacks covered in their sample were aimed at victims whose religion was different from the attacker's religion.

religious cleavages are superior to the commonly used measures and cast a new light on the relationship to be investigated.

The paper proceeds as follows. In Section 2 we review the related empirical literature. In Section 3 we empirically investigate whether religious cleavages between conflict parties are correlated with the incidence of suicide terrorism, and in Section 4 we use our self-compiled religious cleavage data to investigate whether different religious affiliations of perpetrators and victims are related to the incidence of suicide terrorism. Section 5 concludes.

2. Related literature

2.1. Terrorism in general

Systematic empirical research on the causes of terrorism at large is by now a firmly established field in political science and economics.[10] International terrorism, in particular, has received a great deal of scholarly scrutiny (Sandler and Enders 2004, Shughart 2006, Enders and Sandler 2006, Enders et al. 2011). Nonetheless, some fundamental issues are still hotly debated. Most studies find, for example, that the socio-economic development of a country does not significantly affect terrorism. A case in point is the study by Kis-Katos et al. (2011) providing evidence that terrorism is not rooted in economic deprivation. High levels of unemployment do however help terrorist organizations to recruit better educated suicide terrorists who are able to attack more valuable targets (Benmelech et al. 2012). Freytag et al. (2011), on the other hand, maintain that socio-economic variables do matter for terrorism, implying that terrorism might be reduced by economic development and growth, and Caruso and Schneider (2011) confirm that in Western Europe the classical economic concept of opportunity cost is indeed predicative of an individual's willingness to be involved in a terrorist activity. In any event, the scholarly consensus appears to converge to the stylized

[10] See the surveys by Krieger and Meierrieks (2011) and Gassebner and Luechinger (2011).

fact that the relationship between poverty and terrorism is highly non-linear (hump-shaped) and varies according to the specific circumstances; the low income explanation of terrorism applies better to the perpetrators' home country than to the venue country (Enders et al. 2014).

Not controversial is that the viability of a terrorist organization heavily depends on the public opinion in the organization's constituency. Especially an unfavorable opinion towards the target increases community support which, in turn, facilitates recruitment, reduces the danger of detection, and helps rendering terrorist attacks acceptable for the community (Pape, 2005). These channels of influence give rise to a robust positive relationship between public support for terrorism and terrorist attacks (Malečková and Stanišić, 2011).

Rapoport's wave theory of international terrorism (2004) claims that the popularity of ideologies which drive modern terrorism follow a wave-like pattern. A wave forms when a new ideology begins to gain a foothold; then it rises, reaches its peak, and finally declines. Rapoport identifies four waves: the anarchist (1870's – 1910's), anticolonial (1920's – 1960's), New Left (1960's – 1980's), and current religious wave (1970's – 2020's) which gave rise to suicide terrorism. Each wave has distinct motivations and is supported by specific terrorist organizations and specific tactics; the only common feature is the limited duration of the wave. Terrorist waves are likely to be replaced after about 40 years by another one whose main ideology is however difficult, if not impossible, to predict. Rasler and Thompson (2009) find supporting evidence for Rapoport's wave theory and his claim that religious zealotism increases the death toll of terrorist activities. Fox (2012) finds that religious cleavages have become the root cause of most domestic conflicts since the 1970s. Sedgwick (2007) maintains that it is not ideologies that cause terrorism; successful terrorist strategies rather inspire radical groups to try similar strategies. He corroborates the wave-like behavior of modern terrorism, but suggests an alternative periodization and labelling of the

four waves identified by Rapoport: the Italian wave (1820's – 1940's), the German wave (1910's – 1930's), the Chinese wave (1930's – 1960's), and the Afghan wave (1970's – present). Terrorism is not a homogeneous phenomenon: Kis-Katos et al. (2014) show that determinants of terror differ between terror types.

Another strand of the political-economic literature on terrorism deals with the consequences of terrorist attacks and on defensive measures. Terrorism has been associated, for example, with reduced economic growth (see, for example, Blomberg et al., 2011). Gaibulloev et al. (2014) do however not find any such significant impact when cross-sectional dependence is taken into account.

Terrorisms has also been associated with attendant market reactions (Kollias et al., 2011), FDI flows (Enders et al., 2006), and human rights (Dreher et al., 2011). To counter these adverse effects, stake holders can seek corporate terrorist insurance (Michel-Kerjan and Raschky, 2011) and target countries can resort to protective measures, including military missions (Enders et al., 1990). The effectiveness of such protective measures depends, of course, on the attendant circumstances. The international counter-piracy mission in the Gulf of Aden, for example, has been a qualified success (Shortland and Vothknecht, 2011), whereas the effectiveness of other missions is more doubtful. Homeland security measures are, as a rule, less costly than military missions, but they nevertheless may come at a high cost in terms of forgone individual liberty, the prime example being the backlash of the "Snowden affair" of 2013. The willingness to trade off security for liberties does, of course, depend on the individual assessment of the pertaining terrorist risk (Bozzoli and Müller, 2011).

2.2. Suicide terrorism

The literature on suicide terrorism is much smaller than the literature on terrorism in general. Simply classing suicide terrorism with terrorism in general is however not always expedient as Seifert and McCauley (2014) have shown. Investigating attempted or completed suicide attacks in Iraq from 2003 to 2010, they find that in the period 2004-2006 the number of monthly suicide attacks correlate only weakly with the number of other kinds of insurgent attacks whereas in the period 2007-2010 the correlation is much stronger. This result indicates that suicide attacks, at least at times, reflect a different dynamic than other forms of insurgence.

Pape's early contribution (Pape, 2003) and the monograph based thereon (Pape, 2005) are fundamental for the literature on suicide attacks. Pape (2005) focuses on the relationship between religious cleavages and suicide terrorism and identifies nationalism as the main root of suicide terrorism. Nationalism is defined as "the belief among members of a community that they share a distinct set of ethnic, linguistic, and historical characteristics and are entitled to govern their national homeland without interference from foreigners" (p.79). Many scholars argue that from this set of cultural differences, language is the most important attribute indicating the identities of the foreign occupiers and the local community. Pape, however, claims that under extreme situations, such as war or foreign military occupation, "the relative importance of religious and linguistic differences normally reverse and religious difference can inflame nationalist sentiments in ways that encourage mass support for martyrdom and suicide terrorism" (p.88). A religious cleavage between the occupier and the occupied allows terrorist organizations to portray the enemy in the most negative way possible in order to gain mass support for the resistance. Religious motives may also foster the willingness to die and the willingness to kill others since "rewards in the afterlife will compensate them from losing their lives in suicide attacks, but not if they kill coreligionists" (Berman and Laitin 2008: 1949). Analyzing 58 "democratic occupations" (which include 56

cases of democratic states controlling the homeland of a distinct national minority within its own borders and two foreign military occupations), Pape (2005) indeed finds that from 1980 to 2003 suicide terrorist campaigns were most likely under democratic occupations characterized by religious differences between the "occupier" and the group that perceives occupation.

Pape's research method is, however, in many respects questionable (see Wade and Reiter, 2007, and Seifert and McCauley, 2014). Pape relies on the *Minorities at Risk* database to select his universe of observations (i.e. the analyzed democratic occupations) and augments this dataset by including foreign military interventions for the period 1980-2003. But Pape's coding of perceived occupations appears to be somewhat arbitrary. As Wade and Reiter (2007) remark, Pape does not code all minorities listed in the *Minorities at Risk* dataset as perceiving occupation and includes only two military interventions, although the respective criterion is satisfied by other interventions as well.

In their own study that also covers the period 1980-2003, Wade and Reiter (2007) rely exclusively on the *Minorities at Risk* database to identify perceived occupations which they define as occupations of religiously dissimilar minorities. Unlike Pape (2005), Wade and Reiter (2007) do not use these perceived occupations as their unit of analysis but rather country-years for some 150 countries. Moreover, the authors apply more advanced statistical methods. They find some evidence that, for free and partly-free states, the number of religiously distinct minorities at risk are correlated with suicide terrorism, but the substantive impact of the religious cleavage turns out to be marginal. Collard-Wexler et al. (2014) point out that when restricting perceived occupation to religiously dissimilar minorities, the effect of religious cleavages on the incidence of suicide attacks cannot be identified anymore. As a consequence, they distinguish perceived occupations (foreign occupations or domestic separatist movements) that are characterized by religious cleavages between occupiers and

occupied from perceived occupations that are not burdened with a religious cleavage. Otherwise, the research designs of Collard-Wexler et al. (2014) and Wade and Reiter (2007) are very similar. With respect to the control variable that is relevant in our context, Collard-Wexler et al. (2014) find that religious cleavages have only a statistically and substantially significant effect on the incidence of suicide attacks if the perceived occupier is a foreign agent.

Piazza (2008) uses the *RAND-MIPT Terrorism Incident Database* to investigate under what circumstances terrorists use suicide attacks rather than conventional means of terrorism. The unit of analysis is thus the individual terrorist attack that can involve suicide bombings or not. It transpires that suicide attacks are more likely when the attacker and the victim are of different religions. Henne (2012), finally, uses the suicide attacks carried out between 1980 and 2006 as the units of analysis, the dependent variable being the number of deaths per attack. He finds that suicide attacks by terrorist groups with a religious ideology cause more deaths than attacks carried out by terrorists with nationalist or leftist ideologies. More relevant for our study is that religious cleavages between terrorists and victims (as measured by the number of sizeable minority religions) were not shown to have a statistically significant impact on the death toll of the suicide attacks.

3. Religious cleavages in conflicts

3.1. Data and descriptive statistics

We begin by analyzing the incidence of suicide terrorist attacks in violent conflicts. The unit of analysis thus consists of conflicts. Our sample includes 141 conflicts in the period 1981-2010. Table 1 presents a list of the 85 countries that were involved in these conflicts. The conflict sample is taken from the *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al.

(2002), version 4-2011.[11] In this dataset an armed conflict is defined as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths".[12] Table 1 indicates that various countries have experienced more than one conflict. Since the incidence of suicide attacks varies a great deal even across conflicts in one country, we chose to focus on the number of suicide attacks per conflict and not per country. Some conflicts gave rise to transnational suicide attacks; we also included these incidences.[13] The dependent variable is thus the total number of conflict-induced suicide attacks over the period 1981-2010. The main explanatory variable is the presence or absence of a religious cleavage between the two conflicting parties.

Data on suicide attacks

We use the data on suicide attacks from Pape's *Chicago Project on Security and Terrorism*. This database includes "every suicide attack in which at least one terrorist killed himself or herself while attempting to kill others; it excludes attacks authorized by a national government" (Pape 2005: 3). Conflicts between the governments of two countries are thus excluded from our sample. Pape draws the information "from suicide terrorist groups

[11] This dataset is a joint project between the Uppsala Conflict Data Program (UCDP) at the Department of Peace and Conflict Research, Uppsala University, and the Centre for the Study of Civil War at the International Peace Research Institute in Oslo (PRIO).

[12] This is the definition used by UCDP. For a more in-depth discussion on the definition see the UCDP/PRIO Armed Conflict Dataset Codebook, version 4-2011.

[13] We have included only the case of Lebanon, where suicide attacks were caused by the conflict between Israel and the terrorist group Hezbollah. The conflict between USA and Al Qaeda also resulted in a small number of transnational suicide attacks against US allies (which represent 2% of our sample). These incidences are not included in the sample since it not clear which country's interests were targeted.

themselves, from the main organizations that collect such data in target countries and from news media around the world" (p. 4). His database was criticized by some experts since the circumstances that qualify an attack to be classified as relating to a suicide terrorist campaign are not well defined. This classification problem is however not relevant for our study because our dependent variable is the number of suicide attacks on the territory of the included countries and thus does not rely on a particular definition describing "suicide terrorist campaigns". We admit that our data is not free of potential measurement errors because of the uncertainty related to the reported incidents. Wade and Reiter (2007) make use of a broader dataset by combining Pape's database with the dataset compiled by Pedhazur (2005). Pedhazur's dataset is however not available for our entire sample period. We therefore have to make do with the *Security and Terrorism Database* compiled by the *Chicago Project*.

Data on religious cleavages between parties engaged in violent conflict

We measure religious differences with the help of Lindberg's (2008) classification. Using the *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al. (2002), Lindberg (2008) coded the religious affiliations of the fighting parties and then indicated whether or not these parties are related to different religions. A religious cleavage exists "when the two parties belong to separate religions, when they adhere to different denominations of one religion, or when one side is religious and the other side not" (p. 49). In the terminology of Lindberg (2008), conflicts between Sunni and Shia Muslims thus reflect a religious cleavage. The variable assumes the value 0 when no religious difference is present and 1 when a religious difference exists.[14] Missing values are not a substantial problem since only three conflicts in the sample

[14] See Lindberg (2008) for details concerning his methodology (p. 52-53) and his sources (see Appendix A).

period (1981-2004) could not be coded.[15] For the remaining six years of our sample period (2005-2010), we have coded the religious cleavage variable ourselves. This was a quite straightforward exercise since most cases are episodes of conflicts that were already coded by Lindberg. To code the remaining conflicts we have primarily relied on the *Minorities at Risk Database*, on Svensson (2007) and on the *Violent Extremism Knowledge Base.*[16] In four cases we have not been able to code the religious cleavage variable.[17]

In the main specification of our empirical model we alter Lindberg's (2008) definition of religious cleavages by considering different denominations of one religion as the same religion. For example, we do not consider conflicts between Sunni and Shia Muslims as reflecting a religious cleavage because both are denominations of one religion. We do however use Lindberg's original coding as a robustness test. Furthermore, the conflicts in Afghanistan and Iraq, countries with the highest incidence of suicide terrorism, require special attention. Lindberg (2008) classifies these conflicts as not reflecting any religious cleavage. Yet the involvement of USA and other Christian European countries was certainly perceived by the rebel groups as a major threat to the Islamic world. Hence we label these two conflicts as reflecting religious cleavages beginning with the year in which foreign forces became involved in the conflicts.

Correlation between suicide terrorism and religious cleavages in conflicts

[15] This reduces the sample by three countries: Ghana, Haiti and Uganda.

[16] This database was compiled by The Institute for the Study of Violent Groups at University of New Haven. (http://www.isvg.org/about/partners/).

[17] The four cases refer to the conflicts between Central African Republic and the Union of Democratic Forces for Unity/The Convention of Patriots for Justice and Peace, between India and the Kuki National Front, between Myanmar and the Myanmar National Democratic Alliance Army, and between Togo and the Togolese Movement for Democracy.

To illustrate the correlation between the incidence of suicide terrorism and religious cleavages we examine the number of suicide terrorist attacks in conflicts with and without a religious cleavage. Table 2 shows that in conflicts in which religious differences play no role, the incidence of suicide terrorist attacks is smaller than in conflicts fraught with a religious cleavage.

Among the 117 conflicts in which no suicide attacks occurred, 62 conflicts are characterized by the absence of any religious cleavage, whereas 55 are characterized by a religious cleavage. And among the conflicts in which suicide attacks were actually used to terrorize the population of the opponent, it appears that religious cleavages between the conflict parties led to a higher incidence of suicide terrorist attacks. This positive correlation could, of course, be driven by some other factors, such as economic prosperity, specific cultural traits, or the nature of the conflict. To test the hypothesis that religious cleavages between the conflict parties are conducive to using suicide terrorism more rigorously, we therefore now turn to an econometric analysis.

3.2. Econometric analysis

The econometric model

The baseline econometric model has the following form:

$$Suicide\ Attacks_i = \alpha\ Religious\ Cleavage_i + \beta\ log\ Population_i + \gamma\ log\ GDP_i + \delta\ Democracy_i + \varepsilon\ Muslim_i + \Sigma_k\ \zeta_k\ Region_{ik} + u_i,$$

where i=1,…,134 indexes the conflicts and k=1,…,4 represents four world regions. The dependent variable $Suicide\ Attacks_i$ denotes the number of suicide attacks in conflict *i*. The explanatory variable $Religious\ Cleavage_i$ is a dummy variable which assumes the value 0 if there is no religious cleavage between the two conflicting parties and 1 when such a cleavage

is present. Following related studies such as Collard-Wexler et al. (2014), we also include the logarithm of population size of the country in which the suicide attacks occurred and the logarithm of real per capita GDP. The values are averaged over the period 1981-2010. The data is taken from the World Penn Tables, version 7.1. $Democracy_i$ is the Democracy-Dictatorship index by Cheibub et al. (2010) which assumes the value 1 when a country is democratic and 0 otherwise. The values are averaged over the period 1981-2008 (there are no data available for 2009 and 2010). $Muslim_i$ assumes the value 1 if the terrorist organization responsible for the attack has affiliations to Islam and 0 otherwise. $Region_{ik}$ is a set of regional dummy variables that assume the value 1 when a conflict takes place in a certain region and 0 otherwise. We distinguish between five regions: Asia, Africa, America, Europe, and the Middle East. No conflicts in Australia or Oceania are included in the sample. The reference category is Asia, i.e. the regression results signify deviations from this reference category. The term u_i denotes the estimation error. Table A1 presents descriptive statistics of all variables included in the model.

Since the dependent variable is an event count, estimating the model by OLS is likely to be inefficient, inconsistent, and biased (Long, 1997). Our data are also overdispersed. We therefore apply a negative binomial regression. Suicide attacks are a rare event: only in 12% of all conflicts terrorists made use of suicide attacks. The Vuong test shows that the negative binomial model is preferred to a zero-inflated negative binomial model in some specifications. In the baseline model, we report results of the negative binomial regression and discuss the results of the zero-inflated negative binomial model below.

Results

Table 3 presents the base-line results of the negative binomial model (coefficient estimates). Column (1) shows the results when only the religious cleavage variable is included. The other

columns show the results when additional control variables are included. Inferences regarding the religious cleavage variable may change when individual control variables are included/ excluded because of potential omitted variable bias and multicollinearity problems. The per capita GDP, democracy and Muslim variable are strongly correlated. The coefficient estimates of the religious cleavage variable have always a positive sign, are statistically significant at the 5% level in columns (2), (5) and (6) but lack statistical significance in columns (1), (3), (4), (7) and (8). Including the regional dummy variables especially renders the religious cleavage variable to lack statistical significance. This indicates that a religious cleavage between the conflict parties is not conducive to suicide terrorism. This result not only contrasts with the first impression gained from the numbers reported in Table 2, it also contrasts with the existing empirical evidence on the relationship between suicide terrorism and religious cleavages.

The coefficient estimates of the control variables are statistically significant in some cases and have the expected signs. The population variable has the expected positive sign and is statistically significant at the 10% level in column (2), but lacks statistical significance in columns (6) and (8). The per capita GDP variable and the democracy variable do not turn out to be statistically significant. The Muslim variable has the expected positive sign and is statistically significant at the 1% level in column (5) and at the 5% level in columns (6) and (8). The estimate in column (8) indicates that the incident rate for suicide attacks perpetrated by an attacker who has affiliations to Islam is about 101 times the incident rate for suicide attacks perpetrated by an attacker who has no affiliations to Islam (incidence rate ratios are computed by e^{α}). This effect is numerically substantial; the standard deviation of the dependent variable is 95 suicide attacks. The coefficient estimates of the regional dummy variables are in many cases statistically significant in columns (7) and (8), indicating that conflicts outside Asia are less likely to experience suicide attacks than Asian conflicts.

We have replaced the democracy-dictatorship variable by Cheibub et al. (2010) by the Constraints on Chief Executive (CCE) index of the POLITY IV index that assumes values between 1 and 7. The CCE index has a negative sign indicating that dictatorships experienced more suicide attacks but lacks statistical significance in many specifications. Including the CCE index does not change the inferences regarding the religious cleavage variable. [18]

We have also included a *Territorial Conflict* dummy variable which assumes the value 1 if the conflict is territorial and 0 if it is governmental according to the UCDP/PRIO Armed Conflict Dataset (version 4-2011). The *Territorial Conflict* dummy variable does not turn out to be statistically significant and including this variable does not change the inferences regarding the religious cleavage variable.

We also used the alternative coding for the religious cleavage variable as a robustness test. Following Lindberg (2008) one can consider different denominations of the same religion as two different religions. In this view Sunni and Shia Muslims are, for example, two distinct religions, whereas in our benchmark coding they represented the same religion (Islam). Inferences do not change when we use this religious cleavage variable: the coefficient estimates of the religious cleavage dummy still have a positive sign but do not turn out to be statistically significant in hardly any specification (Table 4).

When we estimate a zero-inflated negative binomial model, the coefficient of the baseline religious cleavage variable does not turn out to be statistically significant in any specification. The coefficient of the religious cleavage variable considering religious

[18] We also included the CCE index together with the square CCE index to test whether the relationship between terrorism and democracy is hump-shaped as hypothesized by Bueno de Mesquitas (2013) who infers this relationship from a model in which the endogenous choice of rebel tactics depends on the availability of outside opportunities. We did not find any evidence for a hump-shaped relationship, perhaps because suicide attacks are a viable option even under severe political repression, whereas other forms of terrorism are not (indicating again that suicide attacks are not a minor variation of terrorism at large).

denominations is statistically significant at the 10% level in one specification and has a negative sign.

4. Religious cleavages between terrorists and victims

4.1. Data and descriptive statistics

We now shift our focus from the macro level of religious cleavages, i.e. from cleavages between the conflict parties, to the micro level, i.e. to religious differences between the attackers and their victims. The unit of analysis is now the countries that have suffered the respective attacks. To investigate whether the incidence of suicide attacks is influenced by religious differences at the micro level between the actual attackers and victims, we compiled a new dataset that assigns religious affiliations to the terrorists and their victims. The universe of suicide attacks is taken from the *Chicago Project on Security and Terrorism* database (CPOST) which lists all suicide attacks for the period 1981-2010. The CPOST dataset includes 2211 suicide attacks in 32 countries.[19] By far the most suicide attacks occurred in Iraq (955) and Afghanistan (523). Table 5 lists the countries involved, the respective number of suicide attacks, and the number of suicide attacks in which the terrorist and the victims can be associated with different religions.

Data on religious cleavages between attackers and victims

The CPOST database includes details about the targets, the perpetrators, and newspaper articles describing the incidents. Missing targets are very rare. If the targets are military forces, civilians, public places, embassies, or public buildings (e.g., governmental buildings), we coded the target's religion as the predominant religion of the target population. To

[19] For the period 1981-2010, the CPOST database reports a total number of 2233 suicide attacks in 35 countries. We were able to code approximately 99% of the cases: 2211 attacks in 32 countries. We accessed and downloaded the data in the period September-October 2011.

identify the predominant religion in a country/area of a country/city we employed various datasets: the *Fractionalization* dataset by Alesina et al. (2003), the *Minorities at Risk* database, and several governmental web pages. In the cases of Afghanistan and Iraq we coded military forces such as NATO, ISAF, UN, the Provincial Reconstruction Team, and UNHCR as 'Christian' since the majority of the troops deployed in these countries were from American or European countries. AMISOM is also coded as 'Christian' since Uganda and Burundi sent most troops to Somalia. We included international airports or hotels under the category of 'Other', whereas local hotels, restaurants, etc. are coded as belonging to the predominant religion in the respective area. The category of 'Other' also includes compounds of foreign security companies, foreign military food suppliers or any other target for which no nationality is specified in the CPOST database, targets that have religious affiliations to Yazidism, and countries that are mostly nonreligious such as China. The city of Jerusalem is coded as Jewish. To code religious cleavages in Russia, Russian police forces, checkpoints and government buildings are coded as 'Christian',[20] whereas local police, traffic police, and governmental buildings in Chechnya are coded as Muslim.

The identity of the terrorist groups responsible for the attacks is missing in several cases since no group claimed responsibility for the attacks (e.g., in Afghanistan and Iraq). However, for conflicts with a substantial track record of suicide attacks we assign to the unknown perpetrators the religion of the terrorist groups known to have conducted attacks on similar targets. In case of unknown perpetrators of an attack in a country that has not suffered from similar attacks before, we cannot avoid having a missing value. We identify the religious affiliation of the terrorist groups that conducted suicide attacks from Pape and

[20] Although according to Alesina (2003) and CIA Factbook the majority of Russians are non-religious, we decided to follow Pape and the MAR Database and code Russia as 'Orthodox'.

Feldman (2010) and the *Violent Extremism Knowledge Base.*[21] We exclude the suicide attacks that took place in Bolivia, China, and Finland (seven in total) since these attacks were not undertaken to propagate terror but were rather acts of despair caused by personal vendettas, social neglect, or mental health problems. Turkey's Kurdistan Workers' Party (PKK) is coded 'Muslim' and Sri Lanka's Liberation Tigers of Tamil Eelam (LTTE) is coded 'Hindu'. Although it may be argued that LTTE does not have a religious agenda, a religious cleavage is nevertheless present.

To code the religion of the targets we distinguish between six categories: Buddhism, Christianity, Hinduism, Islam, Judaism, and Other. For the terrorist groups we have only four categories, i.e. Hinduism, Islam, Sikhism, and Secular. Based on these religions, we consider a religious cleavage to exist if the target and the perpetrator have different religions. We also defined more specific cleavages that describe different types of religious cleavages such as Islam-Christianity.

An important issue is how to code the religious cleavages when the target comprises individuals with different religions. For example, several suicide attacks in Afghanistan and Iraq were targeted against joint American and Afghan/Iraqi military forces. To be on the safe side, we considered in these cases a religious cleavage to exist since the terrorists might have been willing to sacrifice their coreligionists as collateral damage in order to kill their intended targets.

Descriptive statistics

Table 6 shows the country-specific percentage of suicide attacks characterized by a religious cleavage between perpetrators and victims. Eyeballing these values suggests that religious

[21] See http://www.isvg.org/.

differences measured at the micro level are not associated with the number of suicide attacks in the respective countries. This impression is confirmed by breaking down the total number of suicide attacks to the annual incidence of attacks: the coefficient of correlation between the annual number of suicide attacks per country and our micro level measure of religious cleavages amounts to -0.27.

Worldwide, only about 36% of the suicide attacks are targeted against people who have a different religion than the terrorists who attacked them. The average is however not representative for many countries. In countries such as Afghanistan, India, Israel, Lebanon, Russia, and Sri Lanka, terrorists and victims had different religions in more than 50% of the suicide attacks, whereas in countries such as Iraq, Pakistan, and Turkey, terrorists and victims had the same religion in less than 50%. We also disaggregated the religious cleavage indicator and distinguished between different types of cleavages (see Table 6). In 4% of all suicide attacks, Hindus attacked Buddhist victims, in 65% Muslims attacked Muslim victims, in 20% Muslims attacked Christians, etc.

4.2. Econometric analysis

We now use an econometric model to explain the incidence of suicide terrorism by the country-specific share of attacks in which terrorists and victims belong to different types of religions. This variable captures an entirely different cleavage dimension than the standard variable which identifies religious cleavages with different creeds of the involved conflict parties. Our variable relates to the micro structure of suicide terrorism, whereas the traditional approach focuses on the macro structure.

The econometric model

Our baseline panel data model has the following form:

$$Suicide\ Attacks_{it} = \alpha\ Religious\ Cleavage\ (Share)_{it} + \beta\ log\ Population_{it-1}$$

$$+ \gamma \, log\, GDP_{it-1} + \delta \, Democracy_{it-1} + \Sigma_k \, \zeta_k \, Religion\ Attacker_{ikt}$$

$$+ \theta \, Suicide\ Attacks_{it-1} + \eta_i + \varepsilon_t + u_{it,}$$

with i=1,…,32 indexing the countries in which suicide attacks took place; k=1,2,3 indexing the religion of the attackers; and t=1,…,30 indexing the years (1981-2010). The dependent variable $Suicide\ Attacks_{it}$ denotes the annual number of suicide attacks in country *i* and year *t*. The variable $Religious\ Cleavage\ (Share)_{it}$ denotes the annually measured share of suicide attacks in which the terrorist organization and its victims can be associated with different religions. We include the logarithm of population size and the logarithm of per capita GDP in period *t-1*. $Democracy_{it-1}$ is the Democracy-Dictatorship index by Cheibub et al. (2010) and assumes the value 1 when a country is democratic and 0 otherwise. It is conceivable that suicide attacks also influence political institutions. To avoid concerns of reverse causality, we regress the number of suicide attacks in period *t* on democracy in period *t-1*. $Religion\ Attacker_{ikt}$ is a set of variables that capture the annually measured share of suicide attackers belonging to one of the following four religions: Hinduism, Islam, Sikhism, and Secular. The reference category is Hinduism, i.e. the regression results signify deviations from this reference category. Lastly, η_i represents a fixed country effect, ε_t is a fixed period effect, and u_{it} is the error term. Table A2 in the appendix presents descriptive statistics of all variables included in the model. We estimate a fixed effects negative binomial panel regression model.

Results

Table 7 shows the base-line estimates (coefficient estimates). Similar to the cross-sectional model in Section 3, the coefficient estimates of the religious cleavage variable do not turn out to be statistically significant.

The coefficient estimates of the GDP, population, and democracy variables also lack statistical significance.[22] By contrast, a country's history with suicide terrorism is significant. The estimated coefficient for the lagged dependent variable in column (7) has a positive sign and is statistically significant at the 1% level, indicating the unsurprising fact that countries that experienced suicide attacks on their territories are more prone to suffer from such an attack in the following year.

The Muslim attacker variable is statistically significant at the 1% level in columns (6) and (7). The estimate indicates that when the share of suicide attacks perpetrated by a Muslim attacker increases by one standard deviation (0.35) the expected log count of the number of suicide attacks decreases by 0.7 (as compared to suicide attacks perpetrated by Hindu attackers). This result appears to go against the grain because suicide attacks perpetrated by Hindus are quite rare (11%) as compared to attacks perpetrated by Muslims (86%). Almost all suicide attacks perpetrated by Hindus occurred, however, in Sri Lanka and were targeted against the Buddhist Sinhalese majority population or against Sri Lankan military forces. When we exclude the suicide attacks in Sri Lanka, the coefficient estimate of the Muslim attacker variable does not turn out to be statistically significant anymore.

The Sunni-Shia cleavage

Several Islamic states are plagued by growing sectarian violence between Sunni and Shia Muslims. This kind of violence is especially prevalent in Iraq and Pakistan where a large number of suicide attacks are targeted at Shia pilgrims, mosques, and civilians living in Shia neighborhoods. In a second specification of our model we acknowledge these intra-religious conflicts and consider a religious cleavage to exist when the attacker and the target adhere to

[22] Replacing the democracy-dictatorship variable by Cheibub et al. (2010) by the Constraints on Chief Executive index does not change the inferences regarding the religious cleavage variable, nor other variables.

different denominations of Islam. This implies for our analysis that we have to distinguish between the Sunni, Shia, Sufi, and Ahmadiyya branches of Islam.

In the following, we explain our strategy of assigning religious denominations to the victims of suicide attacks in Afghanistan and Iraq. These attacks represent about 67% of all attacks in our sample. We use a similar strategy for all other countries. First we set aside the attacks for which we already know that the terrorists and their victims belong to two different religions, for example Islam and Christianity. This leaves us with the cases in which both attackers and victims are Muslim. We assign to all terrorists the denomination 'Sunni' since all groups known to have conducted suicide attacks in Afghanistan or Iraq before 2010 are Sunni extremists.

Assigning religious denominations to the victims of suicide terrorism it not a straightforward exercise. In addition to the CPOST database, we used the *RAND Database of Worldwide Terrorism Incidents* and the *Global Terrorism Database* which sometimes offer information about the religious denomination of the victims. We were able to identify the attacks against Shia mosques, pilgrims and other gatherings, as well as attacks against other denominations such as the Sufi and Ahmadiyya branches of Islam. Attacks targeted at government officials or group leaders are more difficult to classify: in some cases we managed to determine the religious denomination of the victim, but these kinds of attacks are responsible for most of the missing values in our dataset. Afghanistan has a Sunni majority, only 10-15% of the population is Shia.[23] We therefore code Afghani security forces, administrative bodies, and general civilian targets as 'Sunni'. Iraq, on the other hand, has a mixed Sunni-Shia population. The Shia population is concentrated in the southern provinces

[23] Pew Forum on Religion & Public Life (2008): "Mapping the Global Muslim Population: A Report on the Size and Distribution of the World's Muslim Population", p. 39

and amounts to 65-70%.[24] We code Iraqi security forces, administrative bodies, and general civilians as 'Sunni' if the attack took place in the Dahuk, Arbil, Sulaymaniyah, Salah ad Din, Diyala, Anbar, or Ninawa provinces, and as 'Shia' if the attacks were conducted in the Basrah, Muthanna, Najaf, Karbala, Qadisiyah, Dhi-Qar, Misan, Babil, or Wasit provinces in Southern Iraq.[25] Baghdad's and Kirkuk's population is mixed across districts. Since we have not been able to pinpoint the districts in which the reported attacks took place, we coded the targets as 'Sunni' in one specification, as 'Shia' in a second specification, and dropped all observations from Baghdad and Kirkuk provinces in a third specification. Attacks on Kurdish targets and members of the Awakening Movement are coded as attacks on Sunni victims. This classification exercise leaves our sample of suicide attacks with 2071 observations which represent 97% of the attacks listed in the CPOST database.

The results reported in Tables 8 and 9 show that inferences do not change when the religious cleavage variable includes the Sunni-Shia cleavage, coding victims in Bagdad and Kirkuk provinces as Shia, Sunni, or dropping the respective observations altogether.

5. Conclusions

In some violent conflicts, suicide attacks are extensively used as a means of warfare, whereas in others we do not observe any suicide attacks at all. What is the reason for this discrepancy? One of the answers provided by recent research is that suicide terrorism is much more likely to be used in conflicts characterized by religious cleavages between the fighting parties. This explanation has been promoted by Robert Pape some 10 years ago. Even though some

[24] Idem, p. 40

[25] To identify the dominant religion in the Iraqi provinces we employ the map on religions in Iraq created by Dr. Michael Izady and hosted by the Gulf/2000 project website.

(available at: http://gulf2000.columbia.edu/images/maps/Iraq_Religions_lg.png)

evidence based on advanced statistical techniques has been brought forward in the meantime, Pape's religious-cleavage hypothesis still remains rather inconclusive. Some of the empirical tests uncover no or only very weak effects (Abadie 2006, Wade and Reiter 2007), others find supporting evidence only for special circumstances (foreign occupations: Collard-Wexler et al. 2014), for the choice of the method of the terrorist attack (Piazza 2008), or for the death toll of individual suicide attacks (Henne 2012).

To test Pape's religious cleavage hypothesis again, we developed a new research method. We employed the *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al. (2002) to select the relevant universe of observations. In a cross-conflict analysis we relied on the macro coding of religious cleavages in violent conflicts by Lindberg (2008). In a self-collected dataset, we measure religious cleavages with the help of a new concept that is based on the micro-cleavages between terrorists and victims of the individual suicide attacks. Since this measure can only be obtained for countries that actually have suffered from suicide attacks, we have to work with a substantially reduced sample and therefore cannot use a cross-country analysis but exploit a panel structure to arrive at a workable sample size.

In our cross-conflict analysis on the incidence of suicide attacks we followed Abadie (2006) and chose our units of analysis to consist of entire conflicts because using conflict-years as the unit of analysis artificially increases the sample size without adding substantially new information. Moreover, some conflicts lasted much longer than others, with the consequence that these conflicts have a larger weight in panel regressions. All in all, these caveats suggest that the relatively high statistical significance of the estimates in such panel models needs to be interpreted very cautiously. We prefer to play it safe and to work with a much smaller sample size in a cross-conflict approach. Our results do not show that religious cleavages are an important precondition for the incidence of suicide attacks.

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Table 1

List of countries involved in armed conflicts in the period 1981-2010.

Country	Number of conflicts	Country	Number of conflicts
Afghanistan	1	Mauritania	1
Algeria	1	Mexico	1
Angola	2	Moldova	1
Azerbaijan	2	Morocco	1
Bangladesh	1	Mozambique	1
Bosnia-Herzegovina	3	Myanmar	10
Burkina Faso	1	Nepal	1
Burundi	1	Nicaragua	1
Cambodia	1	Niger	3
Cameroon	1	Nigeria	3
Central African Republic	1	North Yemen	1
Chad	1	Pakistan	2
Colombia	1	Panama	1
Comoros	2	Papua New Guinea	1
Congo	1	Paraguay	1
Cote d'Ivoire	1	Peru	1
Croatia	1	Philippines	2
Djibouti	1	Romania	1
DR of Congo (Zaire)	2	Russia (Soviet Union)	6
Egypt	1	Rwanda	1
El Salvador	1	Senegal	1
Eritrea	1	Serbia (Yugoslavia)	3
Ethiopia	6	Sierra Leone	1
Gambia	1	Somalia	1
Georgia	3	South Africa	2
Ghana	1	South Yemen	1
Guatemala	1	Spain	1
Guinea	1	Sri Lanka	2
Guinea-Bissau	1	Sudan	1
Haiti	1	Suriname	1
India	11	Syria	1
Indonesia	3	Tajikistan	2
Iran	2	Thailand	2
Iraq	2	Togo	1
Israel	2	Trinidad and Tobago	1
Kenya	1	Turkey	2
Laos	1	Uganda	1
Lebanon	1	United Kingdom	1
Lesotho	1	United States of America	1
Liberia	1	Uzbekistan	1
Macedonia	1	Venezuela	1
Malaysia	1	Yemen	2
Mali	1		

Source: *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al. (2002)

Table 2

Number of suicide attacks in conflicts characterized by the existence/absence of a religious cleavage between the conflict parties

	0 suicide attacks	**1 – 50 suicide attacks**	**51 – 100 suicide attacks**	**101 – 250 suicide attacks**	**> 250 suicide attacks**
No religious cleavage	62	4	0	0	1
Religious cleavage	55	7	1	2	2

Source: conflicts – *UCDP/PRIO Armed Conflict Dataset* by Gleditsch et al. (2002); religious cleavage - Lindberg (2008) and own calculations.

Table 3
Dependent variable: number of suicide attacks per violent conflict
Crucial explanatory variable: religious cleavage between conflict parties
Negative binomial regression, coefficient estimates

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Religious Cleavage	1.805	3.043**	1.963	1.631	4.064**	4.269**	0.872	2.170
	(1.169)	(1.225)	(1.265)	(1.176)	(1.672)	(1.660)	(1.726)	(1.890)
Log Population		0.839*				0.442		-0.229
		(0.506)				(0.698)		(0.563)
Log GDP per Capita			-0.198			0.220		1.031
			(0.807)			(0.796)		(0.945)
Democracy				-1.034		0.209		-1.361
				(1.822)		(2.591)		(2.776)
Muslim					4.869***	4.400**		4.618**
					(1.677)	(2.141)		(2.007)
Africa							-2.918*	-4.352**
							(1.542)	(2.005)
Americas							-5.779**	-8.876**
							(2.344)	(4.356)
Europe							-2.574	-6.633**
							(1.757)	(2.666)
Middle East							0.905	-1.568
							(1.969)	(1.791)
Constant	1.529*	-7.752	3.054	1.923*	-3.106*	-9.283	2.600**	-5.324
	(0.828)	(5.366)	(6.102)	(1.088)	(1.627)	(7.967)	(1.264)	(7.652)
Observations	134	125	125	134	134	125	134	125
Pseudo R-squared	0.007	0.016	0.008	0.008	0.041	0.044	0.036	0.092

Classical standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4
Dependent variable: number of suicide attacks per violent conflict
Crucial explanatory variable: religious cleavage between conflict parties
Religious cleavage coding includes cleavages in denominations of one religion (e.g. Sunni and Shia)
Negative binomial regression, coefficient estimates

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Religious Cleavage	1.449	2.613**	1.541	1.264	3.312**	3.511**	-0.126	1.170
	(1.206)	(1.309)	(1.280)	(1.206)	(1.664)	(1.627)	(1.915)	(1.982)
Log Population		0.778				0.382		-0.213
		(0.556)				(0.773)		(0.538)
Log GDP per Capita			-0.130			0.272		1.070
			(0.782)			(0.843)		(0.975)
Democracy				-1.116		0.310		-1.571
				(1.699)		(2.768)		(2.692)
Muslim					4.318***	4.033*		4.307**
					(1.645)	(2.244)		(1.987)
Africa							-3.479*	-4.961**
							(1.885)	(2.125)
Americas							-5.499**	-8.556**
							(2.260)	(4.235)
Europe							-2.201	-6.602**
							(1.621)	(2.567)
Middle East							1.280	-1.444
							(1.846)	(1.798)
Constant	1.735*	-6.902	2.762	2.164*	-2.452	-8.536	3.216*	-4.772
	(0.928)	(5.968)	(5.925)	(1.139)	(1.699)	(8.609)	(1.679)	(7.646)
Observations	132	123	123	132	132	123	132	123
Pseudo R-squared	0.004	0.010	0.005	0.006	0.033	0.034	0.034	0.087

Classical standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 5
Countries that have suffered suicide attacks. Religious differences between attackers and victims. Self-compiled dataset

Country	Total Number of Suicide Attacks	Number of Coded Suicide Attacks	Number of Suicide Attacks with a Religious Cleavage	Percentage of Suicide Attacks with a Religious Cleavage
Afghanistan	523	521	266.5	51.15
Algeria	16	16	0.5	3.12
Argentina	1	1	1	100.00
Bolivia	1	0	.	.
China	4	0	.	.
Egypt	5	5	3	60.00
Finland	2	0	.	.
India	13	12	11	91.66
Indonesia	5	4	4	100.00
Iran	7	5	0	0.00
Iraq	955	953	150.31	15.77
Israel	102	101	101	100.00
Jordan	1	1	0	0.00
Kenya	2	2	2	100.00
Kuwait	2	2	1	50.00
Lebanon	38	37	36	97.29
Mauritania	1	1	1	100.00
Morocco	3	3	1.8	60.00
Pakistan	268	267	14	5.24
Palestinian Territory	56	56	56	100.00
Qatar	1	1	1	100.00
Russia	56	55	30.5	55.45
Saudi Arabia	8	8	3	37.50
Somalia	17	17	8.4	49.41
Sri Lanka	105	103	97	94.17
Sweden	1	1	1	100.00
Syria	1	1	0	0.00
Tajikistan	1	1	0	0.00
Tunisia	1	1	1	100.00
Turkey	20	20	2	10.00
Uganda	1	1	1	100.00
United Kingdom	1	1	1	100.00
United States	1	1	1	100.00
Uzbekistan	3	3	0.66	22.22
Yemen	11	10	6	60.00
TOTAL:	**2233**	**2211**	**802.67**	**-**
(%)	**100**	**99.01**	**36.30**	**-**

Table 6
Percentage of suicide attacks with specific religious cleavages between attacker and victim

Religion Attacker	Religion Victim	% of the Total Attacks
Hindu	Buddhism	4.18
Hindu	Christianity	0.09
Hindu	Hindu	0.32
Hindu	Islam	0.05
Hindu	Other	0.07
Islam	Christianity	21.41
Islam	Hindu	0.68
Islam	Islam	63.42
Islam	Judaism	7.79
Islam	Other	0.97
Secular	Christianity	0.59
Secular	Judaism	0.38
Sikh	Hindu	0.05
		100.00

Table 7
Dependent variable: number of suicide attacks per country year
Crucial explanatory variable: religious cleavage between attacker and victim
Negative binomial panel regression, coefficient estimates

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Religious Cleavage (Share)	0.0528	0.169	-0.0478	-0.0901	-0.0108	0.146	0.315
	(0.276)	(0.307)	(0.290)	(0.310)	(0.334)	(0.336)	(0.339)
Log Population (t-1)		0.581			0.525	0.450	0.466
		(0.410)			(0.442)	(0.414)	(0.434)
Log GDP per Capita (t-1)			0.110		0.206	0.420	0.389
			(0.421)		(0.440)	(0.432)	(0.437)
Democracy (t-1)				0.362	0.327	-0.0371	0.106
				(0.382)	(0.375)	(0.438)	(0.431)
Muslim Attacker						-2.184***	-2.190***
						(0.794)	(0.788)
Sikh Attacker						-1.967	-1.975
						(1.361)	(1.356)
Secular Attacker						3.035	3.096
						(2.676)	(2.673)
Suicide Attacks (t-1)							0.0068***
							(0.00219)
Fixed Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	144	132	130	123	121	121	121
Number of Countries	21	20	19	20	19	19	19

Classical standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8
Dependent variable: number of suicide attacks per country year
Crucial explanatory variable: religious cleavage between attacker and victim
The religious cleavage variable includes the Sunni-Shia cleavage.
Victims in Baghdad and Kirkuk provinces are coded as Shia
Negative binomial panel regression, coefficient estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Religious Cleavage (Share)	-0.177	-0.214	-0.226	-0.322	-0.357	-0.155	-0.0680
	(0.306)	(0.311)	(0.317)	(0.340)	(0.338)	(0.348)	(0.354)
Log Population (t-1)		0.452			0.504	0.346	0.288
		(0.383)			(0.436)	(0.396)	(0.415)
Log GDP per Capita (t-1)			0.0814		0.218	0.378	0.375
			(0.448)		(0.477)	(0.464)	(0.463)
Democracy (t-1)				0.373	0.349	0.0675	0.276
				(0.380)	(0.373)	(0.441)	(0.422)
Muslim Attacker						-1.992**	-2.309***
						(0.810)	(0.749)
Sikh Attacker						-1.675	-1.942
						(1.390)	(1.336)
Secular Attacker						3.137	3.033
						(2.694)	(2.674)
Suicide Attacks (t-1)							0.00666**
							(0.00269)
Fixed Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	138	126	126	117	117	117	116
Number of Countries	20	19	19	19	19	19	19

Classical standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 9
Dependent variable: number of suicide attacks per country year
Crucial explanatory variable: religious cleavage between attacker and victim
The religious cleavage variable includes the Sunni-Shia cleavage
Victims in Baghdad and Kirkuk provinces are coded as Sunni
Negative binomial panel regression, coefficient estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Religious Cleavage (Share)	-0.260	-0.292	-0.312	-0.424	-0.456	-0.262	-0.163
	(0.305)	(0.309)	(0.315)	(0.340)	(0.337)	(0.348)	(0.359)
Log Population (t-1)		0.448			0.510	0.349	0.291
		(0.384)			(0.440)	(0.400)	(0.418)
Log GDP per Capita (t-1)			0.0932		0.245	0.416	0.407
			(0.448)		(0.478)	(0.466)	(0.464)
Democracy (t-1)				0.361	0.338	0.0516	0.256
				(0.377)	(0.371)	(0.442)	(0.422)
Muslim Attacker						-1.946**	-2.296***
						(0.816)	(0.750)
Sikh Attacker						-1.581	-1.890
						(1.401)	(1.340)
Secular Attacker						3.126	3.018
						(2.702)	(2.678)
Suicide Attacks (t-1)							0.00636**
							(0.00272)
Fixed Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	138	126	126	117	117	117	116
Number of Countries	20	19	19	19	19	19	19

Classical standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 10
Dependent variable: number of suicide attacks per country year
Crucial explanatory variable: religious cleavage between attacker and victim
The religious cleavage variable includes the Sunni-Shia cleavage
Victims in Baghdad and Kirkuk provinces are not included
Negative binomial panel regression, coefficient estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Religious Cleavage (Share)	-0.241	-0.276	-0.290	-0.394	-0.428	-0.231	-0.0447
	(0.304)	(0.308)	(0.314)	(0.338)	(0.335)	(0.347)	(0.355)
Log Population (t-1)		0.459			0.512	0.345	0.242
		(0.388)			(0.441)	(0.400)	(0.422)
Log GDP per Capita (t-1)			0.0790		0.242	0.411	0.297
			(0.453)		(0.481)	(0.468)	(0.470)
Democracy (t-1)				0.332	0.311	0.0300	0.318
				(0.378)	(0.372)	(0.444)	(0.423)
Muslim Attacker						-1.950**	-2.227***
						(0.818)	(0.753)
Sikh Attacker						-1.602	-1.870
						(1.398)	(1.337)
Secular Attacker						3.105	3.044
						(2.699)	(2.671)
Suicide Attacks (t-1)							0.0112***
							(0.00372)
Fixed Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Time Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	138	126	126	117	117	117	116
Number of Countries	20	19	19	19	19	19	19

Classical standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A1. Summary statistics of conflict-based data

Variable	Obs.	Mean	Std. Dev.	Min	Max	Source
Number of suicide attacks	141	15.51	95.05	0	955	CPOST Database
Religious Cleavage	134	0.50	0.50	0	1	Lindberg (2008)
Religious Cleavage (including denominations)	132	0.59	0.49	0	1	Lindberg (2008)
Muslim	134	0.43	0.49	0	1	Lindberg (2008)
Territorial Conflict	141	0.48	0.50	0	1	Gleditsch (2002)
Europe	141	0.16	0.37	0	1	Gleditsch (2002)
Middle East	141	0.10	0.30	0	1	Gleditsch (2002)
Asia	141	0.29	0.45	0	1	Gleditsch (2002)
Africa	141	0.34	0.47	0	1	Gleditsch (2002)
Americas	141	0.08	0.28	0	1	Gleditsch (2002)
Population	131	113467.20	253742.50	416.71	932027.70	Penn World Tables 7.1
GDP per Capita	131	4109.20	5298.28	365.12	34831.07	Penn World Tables 7.1
Democracy	141	0.34	0.39	0	1	Cheibub et al. (2010)
Constraints on Chief Executive Index	138	3.97	1.70	1	7	Marshall et al. (2013)

Table A2. Summary statistics of country-based data

Variable	Obs.	Mean	Std. Dev.	Min	Max	Source
Number of suicide attacks	960	2.30	15.10	0	254	CPOST Database
Religious Cleavage	155	0.64	0.42	0	1	own coding
Hindu Attacker	155	0.11	0.32	0	1	own coding
Muslim Attacker	155	0.85	0.34	0	1	own coding
Sikh Attacker	155	0.00	0.08	0	1	own coding
Secular Attacker	155	0.02	0.12	0	1	own coding
Population	884	71441.06	170365.10	249.27	1156898.00	Penn World Tables 7.1
GDP per Capita	846	10545.08	16130.55	307.66	159246.90	Penn World Tables 7.1
Democracy	829	0.30	0.45	0	1	Cheibub et al. (2010)
Constraints on Chief Executive Index	822	3.73	2.23	1	7	Marshall et al. (2013)
Number of suicide attacks (including denominations)	959	2.14	14.25	0	243	CPOST Database
Religious Cleavage (including denominations; Baghdad and Kirkuk provinces coded as Shia)	151	0.74	0.37	0	1	own coding
Religious Cleavage (including denominations; Baghdad and Kirkuk provinces coded as Sunni)	151	0.73	0.38	0	1	own coding
Number of suicide attacks (Baghdad and Kirkuk provinces excluded)	959	1.92	11.75	0	170	CPOST Database
Religious Cleavage (Baghdad and Kirkuk provinces excluded)	151	0.74	0.38	0	1	own coding

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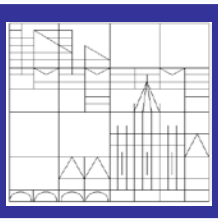
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