**Societal Ideology as an Input for the Development of Terrorism: A Cross-Country Comparison**

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**Abstract**

Terrorism is often treated as a global phenomenon, but each terrorist group begins in a single country. Thus, in order to understand the threats that terrorists pose, one must also understand the societies in which they originate. Societies considered more conservative have traditionally seen a higher number of attacks by religious terrorists, whereas more liberal societies have had their hands full with secular extremists. To investigate whether a relationship between a society’s ideology and the type of terrorism that develops within it actually exists—and what happens in countries that do not fall at one end or the other of the spectrum—data was collected for a sample of countries on the number of terrorist attacks in each of three main subgroups—left-wing, right-wing and religious fundamentalist—over a year-long period. These numbers were then regressed against two measures of societal ideology, focusing on both moral ideology and sociopolitical ideology, as well as other explanatory variables. Preliminary results show that while these notions of “societal ideology” do indeed affect the development of religious fundamentalist terrorism, as well as the total level of terrorism within a country, they have little to no effect on politically motivated terrorism, necessitating further research and modeling in this area, as well as more comprehensive data.

**Introduction**

Given the direct experiences that the United States has had with terrorism, it is understandable that its counterterrorism strategy focuses largely on fighting Islamic extremist groups. This may, in fact, be an accurate representation of patterns of terrorist activity worldwide; of 7,775 total terrorist attacks in 2011, approximately 4,300 attacks were perpetrated by Islamic terrorists, about 1,500 more than the next most common type of attack (secular/political/anarchist) (National Counterterrorism Center, 2011). Still, to ignore other types of terrorist activity is to foster misunderstanding of the conditions that lead to the development of terrorism in a society.

Terrorism is often seen as a transnational phenomenon; for example, al-Qaeda has outposts in myriad countries and has carried out attacks across the world. Yet all terrorists, whether as individuals or members of a group, have a beginning somewhere, and it is likely that the ideologies of the society in which terrorism is born have a sizable influence on the ideologies of that terrorist him or herself. Transnational movements may influence a group, but fundamental beliefs instilled by living in a certain environment (such as the place of women in a society or the ideal type of government) cannot be escaped entirely. In order to understand how and where terrorism is likely to develop, one must take a more holistic approach to the subject and examine not only why certain types occur in some areas but also why they do not occur in others. Such an analysis might allow for more precise targeting of counterterrorism resources to address the specific types of problems apt to develop in different areas.

**Theory**

While other (primarily economic) factors have long been posited as to why terrorism develops in some areas and not in others, few have been shown to exhibit a consistent effect. For example, poverty was long thought to be a major risk factor for individuals in regards to terrorism, yet leaders of terrorist organizations often come from backgrounds of abundance, not scarcity (Mousseau, 2011). Likewise, education is also usually considered a factor, but many terrorists only turn to violence during or after completing their college degrees (Berrebi, 2007). If these factors cannot sufficiently explain where and among whom terrorism flourishes, other influences must also be at play. One possibility lies in the area of the moral and sociopolitical, rather than economic, nature of societies themselves. As posited by Mark Juergensmeyer, expectations for behavior in conservative societies leave young people with no approved sexual outlets outside of marriage, which can lead them to search for other ways to release frustration (Juergensmeyer, 2003). If Juergensmeyer’s logic holds true, societal norms may indeed have a larger influence on terrorist activity than has been previously considered.

For the purposes of this study, three primary subgroups of terrorism are considered: religiously-based terrorism, right-wing terrorism and left-wing terrorism.[[1]](#footnote-1) The reasons for the differentiation within the broader category of politically motivated terrorism are twofold; first, the motivations and goals of right-wing and left-wing terrorists are vastly different, even if both are rooted in politics. Fascist and nationalist groups fall into the right-wing category, as both pursue the right-wing ideas of authoritarianism and nationalism. Left-wing groups, on the other hand, are usually socialist or communist in nature (although a decent number of single-issue groups exist as well, such as the radical Earth Liberation Front in the U.S.). By extension, the environments in which such vastly different types of terrorism develop should also be different. The same is true for religiously motivated terrorist groups as well known as al-Qaeda and as obscure as the Bangladeshi Jamaat-E-Islami. A quick glance at statistical data (or even newspapers) shows that religious terrorism rarely originates in liberal countries where left-wing terrorism comparably flourishes. For instance, Germany sees hundreds of car arsons perpetrated by left-wing extremists each year, while attacks from religious terrorism groups are few and far between (Global Terrorism Database, 2012). Likewise, socially conservative countries in northern and sub-Saharan Africa face threats largely from Islamic extremists, not secular political ones (Global Terrorism Database, 2012).

What happens in countries that fall somewhere in the middle of the spectrum is less clear. Take Sri Lanka and Russia, for example, neither of which is extremely liberal nor extremely conservative. The secular Tamil Tigers may have dominated the former country, but Islamic extremists have thrived in the latter’s southern provinces. For many countries that are not as ideologically polarized, in fact, little is heard about terrorism; from Australia to Botswana, terrorism remains a peripheral concern, if one at all. It would seem to follow, then, that extremism breeds extremism, and the middle ground is indeed an area closer to being devoid of conflict. One would therefore expect that the amount of terrorist attacks in a society would follow a parabolic curve:

# of attacks = β1 (societal ideology)2 + β2 (societal ideology) + β3 (other explanatory variables) + β0

Thus, one can reasonably hypothesize that, ceteris paribus, extreme societies on both ends of the spectrum will foster more terrorist attacks. Extremely conservative societies will see more instances of fundamentalist and/or right-wing terrorism, whereas extremely liberal societies will face greater internal threats from left-wing terrorism. Societies somewhere between the two extremes will see fewer attacks.

**Research Design**

In order to test the hypothesis that the type of terrorism that develops in a society is partially dependent on that society’s ideological framework, it was first necessary to find an appropriate measure of societal ideology. Two different scales were used: traditional vs. secular-rational (TradRat) values and survival vs. self-expression (SurvSelf) values, both of which are calculated through the results of the World Values Survey (WVS). In the context of the WVS, the TradRat dimension indicates the attitude of a society towards religious and “family” values. Countries with a low TradRat score place high levels of importance on absolute moral standards, national pride and religious values; countries with a high score exhibit the opposite tendencies. In regards to the SurvSelf dimension, countries with a high score value self-expression and individualism, embracing (or at least accepting) political and environmental activism, equal rights across genders, alternative lifestyles and other liberal values; countries with a low score do not. Both dimensions are scored on a -2 to 2 scale, although it is possible to score above 2 in cases of extremely liberal countries.[[2]](#footnote-2)

Each iteration, or “wave,” of the WVS includes a minimal sampling of countries; thus, data from two waves, 2000 and 2006, were chosen in order to ensure the most representative sample possible. Data on the number of terrorist attacks in a country was collected for the corresponding year, while data on explanatory variables is the most recent available, as it proved impossible to create a sample of sufficient size using data solely from 2000 or 2006.

Because societal ideology was the primary variable of interest in this study, the sample was restricted to the 87 countries for which the World Values Survey had data, unfortunately eliminating the possibility of a truly random sample. The final experimental sample was further restricted based on the availability of data for the other three explanatory variables included in the model:

1. *Poverty.* While there are multiple studies that have cast doubt on the longstanding idea that poverty is a root cause of terrorism (for example, see Piazza, 2004), it is difficult to ignore the fact that the majority of terrorist groups do not originate in comparatively rich countries, nor are the majority of terrorist attacks perpetrated within such countries (though these types of incidents tend to receive the most attention from the media). Instead, terrorist groups are often economic microcosms of the societies in which they are situated—that is, leaders of such groups tend to be richer, while average members tend to be much poorer. Thus, the Gini coefficient was used to measure the sort of economic inequality in a society that may be mirrored in terrorist groups. Sufficient financial resources often enable the formation of such groups, while the desperation and disillusionment of poverty tend to drive people into their ranks. We would therefore expect to see a direct relationship between high Gini coefficients and higher levels of terrorist activity.

2. *Level of education.* How education affects terrorism depends on the type of terrorist in question; terrorist leaders such as Osama bin Laden and Ayman Al-Zawahiri, were highly educated, more so than the average person in their respective societies. However, those terrorists who are recruited to carry out the plans of the leaders are often less educated or have received a very polarized education (e.g. at a madrasa). As a serious terrorist organization requires both sorts of people, we would expect to see more incidences of terrorism in countries with greater educational inequality. Literacy rates were used to represent the overall educational attainment of a population.

3. *Unemployment.* As found by Altunbas & Thornton (2011), people who are unemployed are more likely to engage in terrorism, perhaps because of an increased amount of time, resentment towards “the establishment” or desperation seeking the sort of outlet that terrorism can provide. Following similar logic used for the Gini coefficient variable above, we would expect there to be a correlation between terrorist activity and high unemployment rates.

Data on these explanatory variables were collected from the CIA World Factbook. Due to the fact that data on all three additional explanatory variables were not available for all countries in the original sample, the final sample only included 57 countries. (For regressions involving right-wing terrorism, one very clear outlier, Greece, was dropped, decreasing the sample size to 56.) Descriptive statistics for the final 57-country sample can be found in Table 1. Of note are the high number of countries which experienced no terrorist attacks for the prescribed period. The small size of the sample and its biased distribution towards industrialized Western democracies can largely be blamed for this, and it must be taken into account that the results of this study are therefore somewhat skewed.

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| --- | --- | --- | --- | --- |
|  | **Mean** | **Standard Deviation** | **Maximum** | **Minimum** |
| Left-wing terrorist attacks per 1000 | .002307 | .001111 | .042081(Spain) | 0(48 countries) |
| Right-wing terrorist attacks per 1000 | .003545 | .003022 | .170863(Greece) | 0(52 countries) |
| Fundamentalist terrorist attacks per 1000 | .006269 | .003333 | .122857(Philippines) | 0(50 countries) |
| Total terrorist attacks per 1000 | .083173 | .055132 | 3.13(Iraq) | 0(33 countries) |
| TradRat score (TradRat) | .082982 | .119126 | 1.96(Japan) | -1.61(Jordan) |
| TradRat score squared (TradRat2) | .801581 | .118461 | 3.84(Japan) | .004(United Kingdom) |
| SurvSelf score (SurvSelf) | .090877 | .147416 | 2.35(Sweden) | -1.68(Iraq) |
| SurvSelf score squared (SurvSelf2) | 1.225214 | .166681 | 5.52(Sweden) | 0(Chile) |
| Unemployment rate, 2010  | 12.189474% | 1.767293% | 95%(Zimbabwe) | 1%(Belarus, Thailand) |
| Literacy rate among adults, 2001 | 94.984221% | 1.082881% | 100%(Finland, Luxembourg, Norway) | 61%(India) |
| Gini coefficient, 2007 | 35.764912 | 1.183998 | 65(South Africa) | 23(Sweden) |

**Table 1**. Descriptive statistics for all variables. Data on unemployment rates and poverty lines are often self-reported and may reflect differences in the definitions of these variables in various countries. N=57.

Although it might be expected that TradRat and SurvSelf scores would be related, the dimensions approach societal ideology in two different ways and thus were treated separately; TradRat is ultimately a measure of traditional moral values, whereas SurvSelf examines societal components of a more sociopolitical nature. Model A included TradRat as an explanatory variable but not SurvSelf; model B included SurvSelf but not TradRat. A third model, model C, included both TradRat and SurvSelf, in order to examine how the two variables might affect patterns of terrorist activity in tandem. All models featured squared versions of the TradRat and SurvSelf variables in order to obtain the theorized parabolic shape.

Data on terrorist activity was collected on the number of terrorist attacks[[3]](#footnote-3) in a given year in each of the 57 countries from the University of Maryland’s Global Terrorism Database, which keeps track of terrorist activity worldwide. This number was further divided into the number of attacks perpetrated by three subgroups: left-wing terrorists, right-wing terrorists and religious fundamentalist[[4]](#footnote-4) terrorists. Finally, each number was converted into a per 1000 people value to account for differences in population between countries and control for the fact that a greater population might cause a country to see more terrorist attacks simply because the pool of potential terrorists is larger.

Due to the secretive nature of many terrorist organizations and a lack of investigatory procedures in some countries, the perpetrator of an attack is not always known. This was the case for many attacks included in the sample, thereby decreasing the pool of data for many countries and potentially causing an inaccurate representation of patterns of terrorist activity in some areas. The final numbers in each category only included terrorist attacks with the following characteristics:

a) A certain perpetrator had either been strongly suspected or identified, and

b) The attack had been perpetrated by a group or individual which had either originated in that country or officially established a cell there.

A “total” variable was also included, which encompassed all terrorist attacks in a country in a given year regardless of whether the perpetrator was known but still excluding attacks by known perpetrators not from or based in the country in question.

Due to time restrictions, only the data set from one year was used. Comparing terrorist activity over time in conjunction with the liberalization (or de-liberalization) of a society is an intriguing area for further research.

Within each model, four regressions were run, relating left-wing, right-wing, fundamentalist and total numbers of terrorist attacks to the explanatory variables.

**Results[[5]](#footnote-5)**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Left-Wing*** | **Model A** | **Model B** | **Model C** |
| TradRat | -8.9E-5(-.05197) | NA | -1.2E-5(-.00675) |
| TradRat2 | -.001(-.72783) | NA | -.00084(-.59344) |
| SurvSelf | NA | -.00017(-.14504) | -.00014(-.11076) |
| SurvSelf2 | NA | -.00074(-.68366) | -.00063(-.55712) |
| Unemployment Rate | .004125(.451719) | .003476(-.68366) | .004054(.416447) |
| Literacy rate | 3.37E-5(.198616) | 6.64E-5(.436692) | 4.99E-5(.281613) |
| Gini coefficient | 4.79E-5(.310929) | 3.4E-6(.022933) | 1.47E-5(.089209) |
| Adjusted R2 | -.07857 | -.07752 | -.11309 |
| F-Statistic | .184075 | .194224 | .187172 |
| N | 57 | 57 | 57 |

**Table 2.** Regression results across all models with left-wing terrorism as the dependent variable. Neither the TradRat or SurvSelf variables were valid in any of the three regressions, nor did the F-statistics for the regressions indicate that these models were appropriate ways to approach explaining left-wing terrorism.

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| --- | --- | --- | --- |
| ***Right-Wing*** | **Model A** | **Model B** | **Model C** |
| TradRat | .004403(.94761) | NA | .000795(1.133788) |
| TradRat2 | -.002(-.53869) | NA | -.00062(-1.13896) |
| SurvSelf | NA | 9.01E-5(.191844) | .000254(.52195) |
| SurvSelf2 | NA | -.00036(-.85223) | -.00041(-.9238) |
| Unemployment Rate | .014967(.604897) | -.008657(2.382025)\*\* | .009946(2.657424)\*\*\* |
| Literacy rate | -.00018(-.38661) | 2.98E-5(.501489) | -1.6E-5-.23734 |
| Gini coefficient | 5.03E-5(.120424) | -3.5E-5(-.61107) | -1.1E-6(-.01788) |
| Adjusted R2 | -.07084 | .025775 | .028294 |
| F-Statistic | .259067 | 1.291023 | 1.228779 |
| N | 57 | 56 | 56 |

**Table 3.** Regression results across all models with right-wing terrorism as the dependent variable, with \*\*\* indicating statistical significance at the α = .01 level. Neither the TradRat or SurvSelf variables were valid in any of the three regressions, nor did the F-statistics for the regressions indicate that these models were appropriate ways to approach explaining right-wing terrorism. Thus, the significance of the unemployment rate in models B and C must be taken with a grain of salt.

Across all models, results for the regressions where left-wing or right-wing terrorism was the dependent variable approached nothing resembling statistical significance. While it might be expected that the moral codes measured by the TradRat dimension would not play a role in determining patterns of politically motivated terrorism, the general sociopolitical leanings of a society (as measured by the SurvSelf dimension) also seem to have little influence. This is an interesting observation; however, its accuracy must be called into question due to the low F-statistics for these regressions, which indicate a degree of invalidity in the modeling that likely renders any conclusions that can be drawn from the data irrelevant. It is possible, of course, that there is actually little connection between the relative liberalism or conservatism of a society and the levels of political terrorism that it develops. What is more likely, logically speaking, is that the lack of data available has skewed results. As detailed in table 1, 48 countries out of a 57-country sample did not experience left-wing terrorist attacks over the period observed, and 52 out of 57 (56 in some cases) did not experience right-wing attacks. Although several countries with known high levels of these sorts of attacks were excluded from the sample due to a lack of data (Germany, for example), it may also be the case that these sorts of terrorism are uncommon enough in most areas of the world so that those places where they do occur must be viewed as exceptions rather than rules which can be explained by an empirical model.

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| --- | --- | --- | --- |
| ***Fundamentalist*** | **Model A** | **Model B** | **Model C** |
| TradRat | -.00754(-1.70991)\* | NA | -.00971(-2.15514)\*\* |
| TradRat2 | .004414(.215056) | NA | .004833(1.370657) |
| SurvSelf | NA | -.00397(-1.26249) | -.00574(-1.83011)\* |
| SurvSelf2 | NA | .002097(.739713) | .002823(.998946)\*\* |
| Unemployment Rate | -.02543(-1.08326) | -.02571(-1.05372) | -.03917(-1.61313) |
| Literacy rate | -.00111(-2.55032)\*\* | -.00146(-3.67025)\*\*\* | -.00096(-2.16078)\*\* |
| Gini coefficient | -.00046-1.15974) | -.00012(-.31407) | -.00051(-1.24878) |
| Adjusted R2 | .206019 | .175175 | .228579 |
| F-Statistic | 3.906134\*\*\* | 3.378638 | 3.370477\*\*\* |
| N | 57 | 57 | 57 |

**Table 4.** Regression results across all models with fundamentalist terrorism as the dependent variable, with \* indicating statistical significance at the α = .1 level, \*\* at the α = .05 level and \*\*\* at the α = .01 level. The linear TradRat variable was found to be statistically significant in models A and C, while both of the SurvSelf variables were significant in model C. The literacy rate was also significant in all three models. The hypothesized parabolic shape is thus supported for fundamentalist terrorism by model C, indicating that it is primarily sociopolitical values that contribute to the “extremism breeds extremism” theory.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Total*** | **Model A** | **Model B** | **Model C** |
| TradRat | .046062(.600558) | NA | -.00746(-.09903) |
| TradRat2 | -.07941(.600558) | NA | -.08414(-1.42778) |
| SurvSelf | NA | -.1137(-2.23398)\*\* | -.11123(-2.12255)\*\* |
| SurvSelf2 | NA | .104537(2.276768)\*\* | .116242(2.460933)\*\* |
| Unemployment Rate | .112973(.276688) | -.22818(-.57735) | -.17661(-.43514) |
| Literacy rate | -.02533(-3.34274)\*\* | -.02203(-3.41114)\*\*\* | -.02342(-3.16793)\*\*\* |
| Gini coefficient | -.00557(-.8085) | -.00477(-.75763) | -.00385(-.55833) |
| Adjusted R2 | .123788 | .210839 | .213976 |
| F-Statistic | 2.582291\*\* | 3.992284\*\* | 3.177809\*\*\* |
| N | 57 | 57 | 57 |

**Table 5.** Regression results across all models with the total number of terrorist attacks as the dependent variable, with \* indicating statistical significance at the α = .1 level, \*\* at the α = .05 level and \*\*\* at the α = .01 level. While the TradRat variables were not significant for this dependent variable in any model, both SurvSelf variables were significant in models B and C. The literacy rate was also significant in all three models. The hypothesized parabolic shape is thus supported for the total level of terrorist activity in a society by model C, indicating that it is primarily sociopolitical values that contribute to the “extremism breeds extremism” theory.

On the contrary, results for the regressions with fundamentalist terrorism as the dependent variable were much more supportive of the hypothesis that patterns of terrorist activity will exhibit a parabolic shape relative to scores on the TradRat and SurvSelf dimensions. In model A, the linear TradRat variable was significant at the 10 percent level with a coefficient of -.00754, indicating that as scores on the TradRat dimension become more positive, incidences of fundamentalist terrorism tend to decrease. In and of itself, this obviously creates a linear, not a parabolic, trajectory of events; however, in model C, both SurvSelf variables were significant in addition to the linear TradRat variable, indicating that both may have an impact on fundamentalist terrorism. Thus, it would appear that while moral ideologies follow a downward-sloping linear curve in relation to fundamentalist terrorism, sociopolitical ideologies in relation thereto do indeed follow the predicted parabolic path.

The hypothesized model was most supported by the regressions in which the total number of terrorist attacks in a country was the dependent variable. Although neither TradRat variable was significant in this case, both SurvSelf variables were statistically significant at the 5 percent level, thereby suggesting that there is some truth in the “extremism breeds extremism” thesis—that is, that countries scoring either very high or very low on the SurvSelf dimension will experience higher levels of terrorism than countries that fall somewhere in the middle.

Also worthy of note are the behaviors of the literacy rate, which was statistically significant at at least the 5 percent level in the last six regressions, and the economic indicators, which were not meaningfully statistically significant in any regression. This would support the notion that education has an inverse relationship with terrorist activity: as the overall societal level of education increases, the level of terrorist activity is likely to decrease. Furthermore, it provide additional support to the notion that economic factors have at best unclear effects on terrorism, and it suggests that the economic inequality present in large terrorist organizations does not necessarily mirror that of the societies in which they are born.

|  |  |
| --- | --- |
|  | **Intercept** |
| Model A, left-wing | -.0023 |
| Model A, right-wing | .01802 |
| Model A, fundamentalist | .128429 |
| Model A, total attacks | 2.734682 |
| Model B, left-wing | -.00363 |
| Model B, right-wing | -.00161 |
| Model B, fundamentalist | .150574 |
| Model B, total attacks | 2.256389 |
| Model C, left-wing | -.002 |
| Model C, right-wing | .001847 |
| Model C, fundamentalist | .114227 |
| Model C, total attacks | 2.402473 |

A final observation of interest arises from the intercepts, which were all greater than zero except for the left-wing regressions and one right-wing regression, all four of which were rendered invalid due to low F-statistics. In the other instances, wherein parabolic relationships between numbers of terrorist attacks and societal ideology were demonstrated, it appears that even countries that fall directly in the middle of the TradRat or SurvSelf dimensions experience minor levels of terrorist activity. A country with a score of 0 on both scales, for example, can expect to experience roughly 2.4 terrorist attacks per year for every 1,000 people in its population. While this is not necessarily an encouraging finding, it does indicate that terrorism does not simply disappear from a country as it develops or adopts more moderate attitudes. Given the high numbers of countries in the sample who did experience zero attacks over the observed time period, this raises a question of reliable reporting methods for such attacks. However, it is worth noting that the lower bound for the 95 percent confidence interval for the 2.4 intercept value is .91, which is close enough to zero to suggest that countries in which zero attacks occur are not necessarily abnormal.

**Table 6.** Intercept values for all twelve regressions, indicating that countries falling in the exact middle of the TradRat and SurvSelf spectrums will experience roughly .13 fundamentalist terrorist attacks per 1000 people per year. Furthermore, such countries are likely to experience around 2.45 terrorist attacks per 1000 people per year. Countries falling on either side of this middle value will likely experience more attacks. Intercept values from the left-wing and right-wing regressions were ignored due to low F-statistics, rendering these regressions invalid.

**Conclusion**

Drawing on the fact that some countries experience almost exclusively one type of terrorism, this study set out to explore how societal characteristics, particularly the political and social beliefs that make up a society’s “ideology,” might affect the development of terrorist activity. It was hypothesized that more conservative countries would see higher levels of right-wing and religious fundamentalist terrorism, while more liberal countries would experience more left-wing terrorism. Countries that fell somewhere in the middle of the sociopolitical spectrum would likely experience fewer attacks overall. Overall, the relationship between societal ideology and terrorist activity would be parabolic in nature, with more extreme societies experiencing higher levels of terrorism.

In order to test these hypotheses, the numbers of each of the three types of terrorist attacks as well as the total number of attacks in a given year were regressed against two measures of societal ideology—the TradRat and SurvSelf dimensions of the World Values Survey—in addition to population, unemployment rate, adult literacy rate and the percentage of the population below the poverty line.

Results supported the “extremism breeds extremism” thesis for both religious fundamentalist terrorism and the total number of terrorist attacks in a country; however, neither moral nor sociopolitical ideologies appeared to have an effect on patterns of left-wing or right-wing terrorist activity. This is likely a function of the fact that the sample was skewed heavily towards Western, industrialized democracies due to the unavailability of data for many countries. In order to draw firmer conclusions regarding politically motivated terrorism, a more complete data set is needed, as it seems unlikely that no relationship exists between the political nature of a society and the type and level of politically motivated terrorism it produces.

Outside of the parameters of specific interest, education and economic indicators also yielded interesting results. While the literacy rate had an extremely significant inverse relationship with total levels of terrorism and fundamentalist terrorist attacks, neither the unemployment rate nor the Gini coefficient were significant in any regression, supporting the idea that economic factors should not be the sole focus of counterterrorism efforts. Rather, an increase in education-related aid may be the most effective way of halting the development of terrorism, as would identifying countries that score at either end of the TradRat and SurvSelf dimensions as areas of special concern.

***Appendix A***

Diagnostics for Regressions with Statistically Significant Variables of Interest

Diagnostics were run for all models in which the t-statistics for the TradRat or SurvSelf variables (squared or unsquared) had an α no larger than 0.1, which included the fundamentalist regression within model A, the total regression within model B and both the fundamentalist and total regressions within model C. Overall, the regressions expressed rough normality and low levels of heteroskedasticity. Multicollinearity was not observed in any regression.

**Fundamentalist terrorist attacks vs. TradRat and other explanatory variables**

The regression featuring fundamentalist terrorist attacks in model A exhibited relative normality, as shown in chart 1. Four of the five independent variables included in the regression were homoskedastic with three outliers—Algeria, Iraq and the Philippines—which experienced the highest levels of fundamentalist terrorist attacks (as well as some of the highest levels of terrorist attacks overall). In regards to the other variables, however, these three countries are quite different; for example, while Algeria and Iraq have similar Gini coefficients (35 and 31, respectively), the Philippines’ Gini coefficient is over 10 points higher at 45.8. Moreover, the values of the explanatory variables for these three countries are each similar to those of several other countries (unlike with Zimbabwe, whose

**Chart 1.** Distribution of residuals for the fundamentalist terrorist attacks regression in model A.

**Plot 1.** Residual plot for the TradRat variable in model A’s fundamentalist terrorist attacks regression, with the three major outliers indicated. Aside from these three, the variable exhibits relative homoskedasticity.

95 percent unemployment rate was an outlier due to the wide gap between it and other countries in this regard), making it unclear what exactly has led them specifically to be outliers.

The residual plots for the literacy rate variable exhibited similar patterns of heteroskedasticity across all regressions, with model A’s fundamentalist terrorist attacks regression being no exception. This is likely a symptom of a lack of diversity within the sample; data on least-developed countries (LDCs) is often unavailable or only recorded for certain years. Thus, the sample in this study disproportionately consists of Western, industrialized countries, most of whom have literacy rates between 80 and 100 percent. Below 80 percent, the residuals experience much greater variance, which may indicate that literacy rates converge as countries reach higher levels of development. In the 80 to 100 percent range, there was only one clear outlier: the Philippines, which has a 92.6 percent literacy rate despite experiencing one of the highest levels of terrorist activity in the sample. The inverse correlation found between literacy rate and number of terrorist attacks, then, does not appear to exist in the Philippines, prompting the question of what factors exist in this country that counter what has been otherwise shown to be a very strong effect.

**Plot 2.** Residual plot for the literacy rate variable in model A’s fundamentalist terrorist attacks regression. Most cases fell in the 85-100% literacy rate range; the clear outlier in this range, the Philippines, is labeled.

Philippines

**Total terrorist attacks vs. SurvSelf and other explanatory variables**

The regression featuring total terrorist attacks in model B was roughly normal, as shown in chart 2. For all variables aside from the literacy rate, which exhibited the same pattern described in the model A fundamentalist terrorist attacks regression described above, homoskedasticity was present with Iraq being the sole outlier. One might expect, though, that if data for more Middle Eastern countries had been available and thereby included in the sample, this may not be the case. (As it stands, only two Middle Eastern countries were included: Iraq and Jordan). Another possible reason for Iraq’s outlier status is the 2003 invasion and its aftermath. Were economic and educational data for other countries who had experienced sustained periods of conflict available (such as Afghanistan), it would certainly be worth comparing the cases.

**Chart 2.** Distribution of residuals for the total terrorist attacks regression in model B.

**Plot 3.** Residual plot for the SurvSelf variable in model B’s total terrorist attacks regression, with the major outlier (Iraq) indicated. Aside from Iraq and a few minor cases, the variable exhibits relative homoskedasticity.

**Fundamentalist terrorist attacks vs. all explanatory variables**

The regression featuring fundamentalist terrorist attacks in model C exhibited relative normality, as shown in chart 3. Four of the seven variables included were homoskedastic aside from three outliers: Algeria, Iraq and the Philippines. (The literacy rate, once again, exhibited the patterns described above.) Again, it is unclear what makes these countries unique aside from their high levels of fundamentalist terrorist attacks relative to other countries. Still, given the fact that only five countries in the 57-country sample experienced fundamentalist terrorist attacks over the period in question, large differences in residuals compared to other countries are to be expected.

**Chart 3.** Distribution of residuals for the fundamentalist terrorist attacks regression in model C.

The TradRat variable exhibited slightly less homoskedasticity, with India and Nigeria approaching outlier status as well. Given their status as two of the world’s most rapidly developing countries, one would

**Plot 4.** Residual plot for the SurvSelf variable in model B’s total terrorist attacks regression, with the major outlier (Iraq) indicated. Aside from Iraq and a few minor cases, the variable exhibits relative homoskedasticity.

expect them to fall in the middle of the conservative-liberal scale, thus indicating a lower level of terrorist activity. This is not the case, however; in fact, India has the third highest level of fundamentalist

terrorist activity among countries in the sample. What might be playing a role here is the deep religious divides that exist in both India and Nigeria (between Hindus and Muslims in the former case and between Christians and Muslims in the latter case), something which is not directly accounted for in this study’s modeling and which could prove a fruitful area for further research.

**Total terrorist attacks vs. all explanatory variables**

The distribution of residuals for the regression featuring the total number of terrorist attacks in model C, while the least normal of the regressions analyzed in this appendix, still exhibited rough normality, as illustrated in chart 4. Six of seven variables were shown to be homoskedastic with two outliers: India and Iraq. These two countries represent the highest levels of terrorist activity in the sample, with India experiencing 172 attacks in 2006 and Iraq experiencing a whopping 837. Thus, these countries may be outliers simply because their numbers of attacks are so large, as their indicators for societal ideology, economic development and educational attainment are not much different from those of several other countries.

**Chart 4.** Distribution of residuals for the total terrorist attacks regression in model C.

**Plot 5.** Residual plot for the TradRat variable in model C’s total terrorist attacks regression, with the major outliers—Iraq and India—labeled. Aside from these two cases, the variable exhibits relative homoskedasticity.

Once again, values for the literacy rate were concentrated heavily between 85 and 100 percent with most residuals for these cases falling between -.5 and .5. The normal outliers—Algeria, India and Iraq—are present, along with a new one: Nigeria, which has a 68 percent literacy rate and a relatively active terrorist community. Since such a relationship is predicted, one possible explanation for Nigeria’s status as an outlier is that it should be experiencing higher levels of terrorism given its literacy rate; France, for instance, has virtually an identical pattern of terrorist activity (which is interesting in and of itself) yet a literacy rate of 99 percent.

***Appendix B***

Definition and Classifications of Terrorism

Gibbs (1989) claimed that it is “manifestly absurd” to attempt to study terrorism without first establishing some sort of definition of it. The difficulty in doing so arises from the fact that neither the international nor the scholarly community has been able to settle on one definition: some consider governments, for instance, incapable of committing acts of terrorism, while others do not consider violent actions within the context of war to be terrorism. The definition that is utilized in this study, then, is dictated largely by the data source (in this case, the Global Terrorism Database at the University of Maryland), which itself uses a codified approach to account for the abundance of definitions of terrorism that exist. Thus, for the purposes of this study, terrorism is an “intentional act of violence or threat of violence by a non-state actor.” In addition, the incident must meet two of the following criteria:

1. The violent act was aimed at attaining a political, economic, religious or social goal;

2. The violent act included evidence of an intention to coerce, intimidate or convey some other message to a larger audience (or audiences) other than the immediate victims; and

3. The violent act was outside the precepts of International Humanitarian Law (Global Terrorism Database, 2012).

*Left-wing terrorism* is perpetrated by individuals with motives characterized by extreme political leftist views. Communist and anarchist groups fall into this category, as do single-issue groups such as the Earth Liberation Front who pursue what would generally be considered liberal pursuits (in the sense that a left-leaning individual would likely support the cause in a less extreme form). Left-wing terrorism can and sometimes does overlap with religious terrorism, as has occurred in India with several socialist Muslim groups; however, such groups tend not to be fundamentalist in nature and thus were placed in the left-wing rather than the religious fundamentalist category.

*Right-wing terrorism* is perpetrated by individuals with motives characterized by extreme political rightist views. Fascist and authoritarian groups such as the Neo-Nazis would be classified as right-wing terrorists, as would most nationalist groups, which tend to purport the right-wing views of ethnic superiority, blind patriotism, deference to authority and reactionary attitudes. Instances of right-wing and non-fundamentalist religious terrorism overlapping are rare, as the conservative views of right-wingers and fundamentalists tend to align, and no such instances were observed over the course of this study.

*Religious fundamentalist terrorism* must be differentiated from other types of terrorism with religious underpinnings; fundamentalists are reactionary, extreme in their beliefs and act solely on what they believe is a God-given mandate. The most obvious example is al-Qaeda, which, while possessing political goals, does so only within the context of a sense of larger religious “duty.” Most religious fundamentalist terrorists in the 21st century are Muslim, although countries such as the United States have also seen their fair share of Christian terrorism. More isolated instances of Jewish, Buddhist and Sikh terrorism have also been reported around the world, although large attacks by such groups (such as the Aum Shinrikyo sarin gas attack on the Tokyo subway in March 1995) have diminished considerably over the past decade.

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1. While there may be some overlap in these classifications, this paper assumes that left-wing and right-wing terrorist groups are of a secular nature and that attacks perpetrated by such groups have mainly secular motivations and goals. For further discussion of definitions, please see appendix B. [↑](#footnote-ref-1)
2. More information on the WVS can be found at http://www.worldvaluessurvey.org/wvs/articles/folder\_published/article\_base\_110/files/WVSbrochure6-2008\_11.pdf. [↑](#footnote-ref-2)
3. For an explanation of how terrorism was defined in this study, please see appendix B. [↑](#footnote-ref-3)
4. Henceforth referred to as simply “fundamentalist” terrorists. [↑](#footnote-ref-4)
5. For a residual analysis of those regressions with statistically significant variables of interest, please see appendix A. [↑](#footnote-ref-5)