Foreign Aid and Terrorism: An Empirical Test of the Two-Good Theory of Foreign Policy

Daniel J. Zaccariello, McNair Scholar, Penn State University

Faculty Research Adviser: Glenn Palmer, Ph.D
Professor of Political Science
The College of Liberal Arts
Penn State University

Abstract: This study begins to answer the question of why states choose the policies they do in response to terrorist events. The analyses situate state policy responses to terrorism within the general framework of foreign policy decision-making developed by Palmer and Morgan (2005). We use statistically analyses to test hypotheses regarding state preferences derived from the two-good theory of foreign policy. Specifically, this study examines terrorist incidents and foreign aid allocations for the period 1968-2005. We find that terrorist events do cause change in state preferences over policies not normally considered in the counterterrorism literature.

For many, the provision of security is the most important charge of government. The dramatic breach of internal security exhibited by the 9/11 attacks naturally led governments to take action to deal with the threat. The phrase “Post-9/11” and the ensuing “Global War on Terror” identify that tragic day as monumental and simultaneously identify a time of uncertainty regarding American security, and indeed, global security as a result of the threat of international terrorism.

The responses to the 9/11 attacks involved nearly all the tools of state foreign policy, among them diplomacy, sanctions, and war (Zimmermann and Wenger, 2007). After the 9/11 attacks the U.S. launched wars in Iraq and Afghanistan and increased its official development aid 800% from 2001 to 2005, much of it to the Middle East and South and Central Asia (OECD, 2007; Perlez, 2007). The EU countries have engaged in more law enforcement cooperation, aid giving, and some participated with the U.S. in pre-emptive military action in the same period (Rees, 2006). The U.S. frequently provides aid to countries in order to bolster counter-terrorism efforts in the form of bi-lateral and multi-lateral counter-terror agreements (Ministry of Foreign Affairs, 2007; State Department, 2006). However, this raises the question of why do states choose the policies they do. What sorts of responses do states take after terrorist events and how do those choices affect the use of other foreign policies?

This study seeks to begin answering that question and advance thinking about state responses to terror within the framework of a general theory of foreign policy. We utilize the two-good theory of foreign policy developed by Palmer and Morgan (2006) to derive our hypotheses about a single foreign policy. We then test those hypotheses empirically using data in the International Terrorism: Attributes of Terrorist Events (ITERATE 3-4) dataset and the Organization of Economic Cooperation and Development (OECD) statistics database for the period 1968-2005.
Work on state responses to terrorism has largely focused on traditional counterterrorism policy responses. Specifically, policies are often categorized based on whether they are defensive or offensive/proactive, forward-looking or backward-looking (Enders and Sandler, 2006, Ch. 4; Frey and Luechinger, 2003; Heymann, 2001). Defensive measures are policies that raise the costs to terrorists of carrying out an attack or reduce the perceived benefits through protective measures. In contrast, offensive measures attack the terrorists, their supporters, or hosts directly in order to reduce their capability to carry out further attacks (Enders and Sandler, 2006, p. 86).

An alternative view, presented by Frey and Luechinger (2003), sees responses in terms of deterrence or benevolence. For them, deterrence raises the material costs for terrorists, which would capture policies considered defensive and offensive mentioned above, and leads to increased violence whereas benevolence raises the opportunity costs and, at least potentially, leads to outcomes that are more likely to be peaceful. Deterrent policies include target hardening, preemptive, or retaliatory strikes. Benevolent policies raise the cost of choosing terrorism over “ordinary activities” by providing more opportunities or higher incomes. For example, benevolent policies can come in the form of payment (bribes) for cooperation, investment in education, or negotiation.

The different views of state responses above are derived from economic analysis of rational actors and have success upon empirical analysis. Both views get at explaining different outcomes given differing policy efficacies or preferences of states. However, in both approaches, the preferences of states over the wide range of possible foreign policies are viewed as given, and so are implicit in the models of foreign policy selection in response to terrorist events. That is to say, they presume that there exists a set of policies which are “counterterrorist,” and other foreign policy responses are not considered. We hope to add to the thought on state responses by fitting state responses to terrorist events in the general foreign policy framework developed by Palmer and Morgan (2006). This will allow for consideration of policy selection as a function, in part, of changes in the preferences of states over a policy portfolio. As an initial exploration of the applicability of the two-good theory to explanations for state responses, we look at a single policy: foreign aid, as a response to terrorist phenomena.

Why Foreign Aid?

We choose to analyze foreign aid as our dependent variable because it is a good example of a change-seeking policy. As Palmer and Morgan (2006) argue, foreign aid “is usually given...as a reward or an inducement...to change [a state’s] behavior in some regard” (p. 55). Thinking of foreign aid in the context of terrorism in this study is similar to that of Bapat (2006) in which one option target states have is to make a payment of some sort to a host state in order to induce that state to suppress terrorist organizations operating within their borders. We see foreign aid as operating as just such an incentive to change a state’s behavior, in this case: changing support for terrorist groups. In addition, empirical analyses of foreign aid flows find

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1 Examples are metal detectors in airports, tighter immigration controls, or an increase in domestic law-enforcement. In authoritarian regimes, reducing the benefits might take the form of tighter controls over media coverage so as to deny terrorists the wider psychological effect of an attack.

2 Alternatively called proactive, preemptive, or retaliatory.

3 For the moment, we set aside the barriers to the success of any of the policies mentioned. We only bring them up for illustration.
that there is “considerable evidence that the pattern of aid giving is dictated by political and strategic considerations” in a variety of contexts (Alesina, 2000, p. 33; Dudley, 1976). For example, foreign aid often takes on the role of payment for *quid pro quo* changes in behavior in the UN (Kuziemko, 2006). This suggests to us that foreign aid is well suited for an initial study of the effects on changes in preferences (and the strategic picture) held by states.

**Definitions and Model**

Since terrorist incidents are the stimulus to foreign aid change examined in this study, we will present a working definition of terrorism.\(^4\) Defining terrorism based on particular goals or the identity of the perpetrator of violence is tempting. However, defining terrorism based on ideological grounds would exclude many phenomena commonly considered terrorism; the identities and motivations of terrorist groups and those that support them are diverse and defining based on the goals unnecessarily excludes valuable information.

Furthermore, if any violent act done for political reasons and targets or kills civilians is terrorism, then it would be difficult to exclude any violent phenomena as distinct from terrorism.\(^5\) Therefore, the structural form the attack takes is more important than ideological reasons the attack took place, and so most definitions are limited to non-state actors, while state-sponsored terrorism refers to acts committed by or with the support of states.

An important part of any analytical definition of terrorism is the communicative intent of the terrorist act (Enders and Sandler, 2006, pp. 36-40; Li, 2005; Nacos, 2007; Schmid, 1982). That is to say, terrorists will seek to affect a wider audience by threatening future attacks, essentially a compellent threat to inflict more pain if concessions are not made on a given issue or set of issues in order to change the target government’s policy.

Taking the above together, we define international terrorism as the extra-state use of force by non-state actors for political or ideological reasons against a target, intended to affect an audience larger than the immediate victims. We utilize the ITERATE [3-4] (International Terrorism: Attributes of Terrorist Events, Micklous, 2006) dataset for our data on terrorist incidents, and so the operational definition used comes from the authors of the ITERATE dataset, who state that international terrorism

“…is the use, or threat of use, of anxiety-inducing, extra-normal violence for political purposes by any individual or group, whether acting for or in opposition to established governmental authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims and when, through the nationality or foreign ties of its perpetrators [or] its location…its ramifications transcend national boundaries” (Mickolus, 2006)

An assumption made in this article is that both states and terrorist groups are rational, utility maximizing entities. Modeling states as rational actors is common in many studies. Terrorist groups, if the assumption made above is correct, may also be subject to the same economic analysis used in analyzing states’ actions in international politics (Anderton and Carter, 2005; Bueno de Mesquita, 2005b; Enders and Sandler, 2006; Sandler and Enders, 2004; Sandler, Tschirhart, & Cauley, 1983; Shapiro, 2005). For example, David Lake (2002) extended this core assumption to a bargaining analysis of terrorist groups’ interactions with states, stating that they

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\(^4\) With the caveat that there does not a single agreed-upon definition of terrorism.

\(^5\) As terrorism will be defined here, clandestine state actions which look like terrorism do not fit the definition in part because they are kept secret. That is not to say that states cannot sponsor acts of terrorism. The difficulty arises when our definition of terrorism begins to include acts which may properly be considered acts of war under common understandings of the appropriateness of force in international relations.
strategically aim their actions to alter the status quo in order to improve their bargaining position. That is to say, terrorist groups arise because of specific grievances regarding issues in the status quo and, because of asymmetric capabilities with respect to states, engage in extra-normal violent acts (Bueno de Mesquita, 2005a; Kydd and Walter, 2006; Lake, 2002; Pape, 2003).

The concept of rationality employed in this study is perhaps different than some readers are accustomed to, so we present a basic definition of rationality before summarizing the model of foreign policy utilized here and developing our specific hypotheses. The main thrust of the concept of rationality is that actors are goal-seeking subject to constraints on resources. Rationality used in economic analysis means that an actor’s preferences over a set of alternatives are ordered and transitive. Stated more formally, if there exists a set of alternatives \( S = \{A, B, C\} \), then an actor can specify preferences orderings in \( S \) such that if \( A > B \), and \( B > C \), then \( A > C \). What is contained in the set of alternatives, the actor’s goals, is not part of the concept of rationality employed here. Instead, the essential part of the concept is that the actions taken fit the pattern above.

A conceptualization of the status quo is vital to an understanding of the analysis undertaken in this study. The way the “status quo” is defined here is taken from Palmer and Morgan’s “A Theory of Foreign Policy” (2006), which differs from the status quo as conceived by traditional analyses of foreign policy selection.

An assumption made in much of previous theory and empirical research in international relations is that states have a single issue at the top of their list of priorities: security, achieved through the accumulation of power. A key tenet of Realism is that because the international system is anarchic, states have as their primary interest corporeal security and therefore pursue both relative and absolute gains of power.

The key distinction made by Palmer and Morgan is that actors in the international system care about many things and select policy portfolios to change (or maintain) the status quo in their favor (Palmer and Morgan, 2006). According to the two-good theory, the achievement of particular foreign policy aims comes about through the selection of policies that produce two abstract goods: change and maintenance (rather than one—security). Since “neither heaven nor hell exists on earth,” states seek to change things on an issue making up the status quo which they do not like and maintain things about it they do like (p. 21). States form foreign policy portfolios based on several factors, which are discussed in the next section. By arriving at a more complex notion about what states care about or believe is at stake (and thus are willing to act on), the concept of the status quo unfolds into a much more dynamic and interesting object in international relations. We also have a general explanation of why a terrorist event would cause change in a state’s policies: being the target of terrorist groups is naturally not a status quo situation a state would prefer. There is still the question of how we expect a particular policy to change. We next present the relevant details of the two-good theory from which our hypotheses are derived.

**The Two-Good Theory of Foreign Policy**

This summary of the two-good theory is based on chapters two and five of “A Theory of Foreign Policy” (Palmer and Morgan, 2006). The formalization of the two-good theory produces a model for the general behavior of a state’s policy portfolio. From the basic model, several

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6 Based on Realist theories. Foundational works include (Carr, 1946; Morgenthau, 2006; Waltz, 1965, 1979)
7 (Morgenthau, 2006)
8 For more detail, see Chapter 2 of (Palmer and Morgan 2006, p. 19-27).
hypotheses regarding the effect of changes in resources or salience are deduced. We present the equations that make up the basic formal model to help develop the specific hypotheses tested in this study.\(^9\)

Changes in foreign policy allocations occur due to two primary reasons: the availability of resources to spend on foreign policy and the preferences over types of policies. Resources are captured with the parameter \(b\). Quite naturally, as state resources increase, so does production of all foreign policy goods. Furthermore, a simple, but important deduction made by Palmer and Morgan is that as resources increase, change increases at an increasing rate, and that maintenance increases at a decreasing rate, captured formally with the parameter \(\Omega\).\(^10\)

The parameter \(\pi\) represents the preferences for change or maintenance, also referred to as salience. It is changes in the preferences parameter, as the change in foreign aid, which this study hopes to measure. Preferences are determined by the salience of an issue to the state. The farther away the status quo is on a particular issue, the more the state will value change \((\pi_2)\). Similarly, the closer to the status quo, the more the state prefers maintenance \((\pi_1)\). Another important deduction from this basic model made by Palmer and Morgan is that if a state faces challenges emanating from the international system, then it is reasonable to think that the state would increase its allocation to foreign policies generally. Equations 1 and 2 show the basic functions determining the amount of change and maintenance in a policy portfolio.

**Equation 1**

\[
Q_{\text{maintenance}} = \frac{\pi_1 b}{(\pi_1 + \pi_2)\Omega}
\]

**Equation 2**

\[
Q_{\text{change}} = \frac{\pi_2 b}{(\pi_1 + \pi_2)\Omega}
\]

After a terrorist event, we expect that the preference for a change \((\pi_2)\) would increase. That is to say, a state would not care if a particular country or region hosts a terrorist group until that group becomes a real threat or otherwise provides a cause for a change in policy (such as an attack or threat of an attack). Since the preference for change should increase, we expect an increase in foreign aid.

**Hypothesis 1:** After a terrorist attack from a region, the amount of per-region foreign aid will increase, controlling for GDP and allied status.

**Conditional Hypotheses**

We may also derive a hypothesis for the change in foreign aid conditional on changes in the resources parameter. Since states with more resources can pursue more of all foreign policies in response to a terrorist attack:

**Hypothesis 2:** After a terrorist attack originating from a particular region, the amount of change in per-region foreign aid will increase more for countries with higher GDP than countries with lower GDP.

**The effect of asymmetrical alliances**

Alliances are not a term in the model, however, alliances have specific effects which we can easily test given the data for hypotheses 1 and 2. The general effect of joining alliances is to

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9 The formal model is developed in Chapter 5 of (Palmer and Morgan, 2006)
10 See (Palmer and Morgan, 2006, pp. 35-36).
allow states to produce more of all foreign policy goods because the alliance functions as a joint production economy where both states in the alliance produce both change and maintenance. The specific effect of being in an alliance is that a state gains more in the good that it is relatively less able to produce. Since large states are already very powerful, they produce change at a decreasing rate, but can produce maintenance more than smaller states. Smaller states, on the other hand, produce change at an increasing rate as it surpasses more countries in terms of relative power than larger states. Therefore, smaller states that ally with larger states gain maintenance and are able to produce more change (in our case, we are measuring the change-seeking policy of foreign aid). There are not states more powerful than the U.S., so we look at the effect of terrorist incidents on foreign aid for states in an asymmetrical alliance with the U.S. We expect that states allied with the U.S. will increase foreign aid more than those not in alliance with the U.S. in response to a terrorist event.

**Hypothesis 3:** After a terrorist attack originating from a particular region, the amount of change in per-region foreign aid will increase more for countries allied with the U.S. than those countries that are not allied with the U.S.

**Research Design and Methodology**

The hypotheses are tested with statistical analyses. An ordinary least squares linear regression model is used to test the general and, where appropriate, interactive relationships between the independent variables and the dependent variables. For hypothesis 1, we use an additive model to test the general effect of the number of incidents, GDP, and allied status. For hypotheses 2 and 3, we use a multiplicative interaction model to test the change in the coefficient on incidents for different levels of GDP and allied status.

**Data and Variables**

The unit of analysis is a country-year-region. Following Palmer and Morgan (2006), OECD countries were selected so that the frame of analysis controlled for differences in development and political regime type. The primary independent variable, terrorist incidents, data come from the ITERATE [3-4] (International Terrorism: Attributes of Terrorist Events) dataset, pruned to cover incidents for years 1968-2005 that started in or victimized citizens of OECD countries (Mickolus, 2006). The region for the source of the attack is based on the country code for first nationality of terrorists variable found in ITERATE and coded according to region based on OECD regional breakouts.

The primary dependent variable, foreign aid output, is measured using the official development aid disbursed measure (ODA) employed by OECD’s online statistical database in millions of constant 2005 U.S. dollars (OECD, 2007). ODA is led one year in order to measure the lagged effect of incidents. Data for the GDP control variable, meant to capture state resources, are taken from OECD’s national accounts category also found in the online statistical database and are measured in billions of U.S. dollars in constant 2000 prices.

The asymmetrical alliance variable was coded for based on a country’s alliance status with the U.S. Finally, we create two interaction terms in our statistical model to test the conditional hypotheses 2 and 3. The first is between GDP and incidents since we expect the

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11 For the appropriateness of using multiplicative interaction terms, see (Braumoeller, 2004; Friedrich, 1982).

12 The only OECD country not analyzed here is Mexico because data was missing from the online database.

13 Regions used are: North & Central America, South America, Mideast, South & Central Asia, Fareast Asia, and Oceania.

14 In constant 2000 US $.
coefficient of incidents to change as GDP changes. The second is between allied with the U.S. and incidents since we expect that the coefficient on incidents to change as alliances change.

Results
Table 1 presents the results for the test of the general effects predicted in hypotheses 1 with our main effects model without the interaction terms. The dependent variable is the lagged per-region foreign aid led by one year. To aid interpretation, we centered GDP so its mean is zero (Jaccard and Turrisi, 2003; Young and Perkins, 2005, p. 1195).

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Coef.</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Incidents</td>
<td>3.96</td>
<td>1.27</td>
<td>3.12</td>
<td>.002</td>
</tr>
<tr>
<td>Allied with U.S.</td>
<td>92.83</td>
<td>10.00</td>
<td>9.28</td>
<td>.000</td>
</tr>
<tr>
<td>GDP&lt;sup&gt;c&lt;/sup&gt;</td>
<td>.14</td>
<td>.0031</td>
<td>44.54</td>
<td>.000</td>
</tr>
<tr>
<td>(Constant)</td>
<td>104.3088</td>
<td>8.12</td>
<td>12.84</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 1

<table>
<thead>
<tr>
<th>Main Effects Model - Incidents and Foreign Aid&lt;sup&gt;15&lt;/sup&gt;, OECD countries, 1968-2005&lt;sup&gt;a,b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Incidents</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Number of Incidents</td>
</tr>
<tr>
<td>Allied with U.S.</td>
</tr>
<tr>
<td>GDP&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Per-region ODA led by 1 year
b. N = 6831
c. Mean centered at zero.

We find a positive and statistically significant relationship between the number of incidents in one year and the change in foreign aid the next year for states both allied and not allied with the U.S. when the GDP is at its mean value. As expected, allied states are able to spend $92 million more on foreign aid than non-allied states, on average. In addition, GDP has a positive relationship with the amount of foreign aid. Given the relatively low percentage of GDP given over to foreign aid and the breakdown by region, the coefficient on GDP is, as expected, relatively low. For an increase of $1 billion in GDP, there is, on average, an increase in per region foreign aid of $140,000. For values below the (mean centered) value of GDP, the sign on the GDP term turns negative, but that effect is the result of the mean centering. This result is consistent with the model and theoretically expected. The theory predicts that states with more resources are able to pursue more of all foreign policies.

Table 2 presents the results of the interactive model in which we expect that the general effects seen in table 1 vary over values of GDP and allied status. A simple F-test shows that the multiplicative model adds significant explanatory power to our model. Table 3 presents the predicted values for per-region foreign aid based on the interactive model and illustrates how these terms interact. In analyzing Table 3, we want to compare between allied and not allied countries as well as comparing between low, medium, and high GDP countries within their respective allied columns.

Table 2

<table>
<thead>
<tr>
<th>Interactive Model - Incidents and Foreign Aid&lt;sup&gt;16&lt;/sup&gt;, OECD countries, 1968-2005&lt;sup&gt;a,b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Incidents</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Number of Incidents</td>
</tr>
<tr>
<td>Allied with U.S.</td>
</tr>
</tbody>
</table>

<sup>15</sup> $\Delta$Foreign Aid = $\alpha + \beta_1$(Number of Incidents) + $\beta_2$(Allied with the U.S.) + $\beta_3$(GDP)

<sup>16</sup> $\Delta$Foreign Aid = $\alpha + \beta_1$(Number of Incidents) + $\beta_2$(Allied with the U.S.) + $\beta_3$(GDP) + $\beta_5$(GDP X Incidents) + $\beta_6$(Allied X Incidents)
Recall that hypotheses 2 and 3 predicted that the change in aid would increase more for higher levels of GDP and countries allied with the U.S. Table 2 shows that the expected sign on the coefficients on our interaction terms for incidents and GDP and allied are positive, as expected. However, the general positive effect of incidents seen in our additive model turns negative when we account for different levels of allied status and GDP. Instead, what we see is that the effects of allied and GDP decrease the rate at which countries decrease their per-region foreign aid allocations.

Table 3
**Predicted Values of Foreign Aid, Average Per Region Aid**

<table>
<thead>
<tr>
<th>GDP</th>
<th>Allied with the U.S.</th>
<th>Not Allied with the U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Attacks</td>
<td>Number of Attacks</td>
</tr>
<tr>
<td>Low</td>
<td>1 111.29 109.56 104.38 95.74 5.72 -7.88 -48.69 -116.71</td>
<td></td>
</tr>
<tr>
<td>Mid</td>
<td>1 132.46 131.29 127.80 121.99 26.89 13.85 -25.27 -90.46</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>233.63 235.16 239.77 247.45 128.06 117.72 86.70 35.00</td>
<td></td>
</tr>
</tbody>
</table>

We find that allied countries decrease their foreign aid less than non-allied countries. This means that the alliance with the U.S. allows countries to continue producing more of this change-seeking policy than their non-allied counterparts do in response to terrorist events. In addition, we find that in comparing allied countries to non-allied countries across all values of incidents, the general effect that allied countries spend more on aid than non-allied countries holds.17

We present Figures 1 and 2 to graphically illustrate the relative changes in the amount of aid given in response to incidents found in Table 3. The values we used for the level of GDP in the Low and High rows were one standard deviation below and above the mean, respectively. In Figure 1, we see that the rate of decline in aid decreases as GDP increases, and that High GDP countries actually increase their aid allocations. Referring back to Table 3, we note that Mid GDP countries are decreasing their aid less as a percentage than Low GDP countries. Figure 2 shows that among non-allied countries the amount of change decreases as GDP increases as well. Also, in comparing allied and non-allied countries, we can see that the slope is more steeply negative for non-allied countries for each level of GDP than for allied countries.

17 This is a general effect of alliances predicted in Palmer and Morgan (2005) and alluded to in our section above on alliances.
Figure 1

Predicted Aid: Allied

Figure 2

Predicted Aid: Non-allied
Conclusion

This paper sought to explain how states respond to terrorist incidents within a general foreign policy framework. Theoretically, the preference for change-seeking policies will become relatively larger than maintenance-seeking policies after a terrorist event. We used foreign aid as a measure of a change-seeking policy and did not find strong support for an increase in foreign aid as hypothesis 1 predicted. We did find strong support for the general behavior of states in an asymmetrical alliance with a stronger state as well as the effect of GDP on the level of foreign aid. However, there was limited support for our conditional hypotheses 2 and 3. We predicted that allied states would increase aid more than non-allied states and that states with higher GDP would increase aid more than lower GDP countries. While the general effect of incidents for all states except high GDP allied countries was negative, we found that allied states decreased at a lower rate than non-allied states and that higher GDP countries decreased their aid less than low GDP countries. Therefore, even though the direction of the conditional effect of GDP and allied states was positive as predicted in hypotheses 2 and 3 the negative effect of incidents on foreign aid produced an overall different effect than was theoretically expected.

While we did not find support for the first hypothesis predicting an increase in aid in general terms in response to terrorist events, we note that states have a large number of different foreign policies with which they may use for change. A more fully specified model would account for substitutability of foreign policies. Future research should include variables for other types of policies such as dispute initiation with other states (change-seeking) or military spending (maintenance-seeking). In addition, using dyad level data would specify the direction of aid giving more closely.
References


