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## **WAR-FIGHTING OR ENHANCED POLICING? THE EFFECTIVENESS OF KILL-CAPTURE TOOLS AND TACTICS IN THE POST-9/11 ERA**

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and

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**Jel Codes: I39, B52, C93, D61**

### **ABSTRACT**

For more than ten years the so-called Global War on Terrorism (GWOT) has been shaping not only national security strategies, but also influenced the definition of the enemy being fought as well as the nature of and boundaries between tactics used in this war. While the discussion about anti-terror strategies and tactics on the political level is ongoing, (empirical) research on the efficiency and effectiveness of these measures is still limited. In our article, we examine the relative impact two counter-terrorism approaches – killing and capturing – have on several measures of effectiveness. Scrutinizing data from 2001-2011 in numerous specifications, we empirically test to what extent these tactics may have different effects on different aspects of terrorism. The primary finding of our analysis is that both killing and capturing have components that have significant positive effects, but that these effects vary based on the specifics of who states target as well as the terrorists' own targeting strategies. The most interesting specific findings are that drone strikes seem counter-productive for counter-terrorism and that renditions seem effective, but that traditional policing through enhanced defenses has the largest effects, which are both positive and negative depending on where one lives.

### **INTRODUCTION**

On 7 October 2001, following the attacks of 9/11, U.S. President George W. Bush declared a Global War on Terrorism (GWOT). This represented a paradigmatic shift in the approach most of the West had taken in dealing with terrorism for the past decades. In the face of the old terrorism, often nationalist and leftist in nature, the dominant approach has been through

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traditional policing means, even in states with high terrorist threats such as the UK.<sup>2</sup> The shock arrival of what some labeled “New Terrorism” led the West to shift instead to a war-fighting strategy, one already tested in one form or another in many Middle Eastern states; only in the new GWOT the battle ground would be far from the cities and citizens of war’s leading participants.

Yet in this war the nature of and boundaries between tactics became as unclear as the definition of the enemy being fought. Old tactics were imported into new context, while new tactics and tools were not well understood by the newly empowered actors to which they were given, whether police or military or security/intelligence services. The GWOT came more and more to be driven by tactics, the use of which was taken as proof of their effectiveness, independent of their contribution to strategy and thus to victory. Who to target and how to target them was left aside for the policy to use every tool, everywhere, against all.

This failure of policymakers and military implementers to integrate tactics and strategy is a result also of the failure (of academics) to examine and contribute to a scientific understanding of the relative effectiveness of competing tactics in reducing the incidences and severity of terrorist acts. While possessing a knowledge base to build upon, the desire to “run the perfect experiment” limited academics interests in exploring the new and fast evolving terrain. To remedy this shortcoming, this study examines counter-terrorism strategy in the Global War on Terrorism (alternatively the War on Terror or “Overseas Contingency Operation”) from 2001 to 2011 in order determine the relative effectiveness of war-fighting (killing) versus hard policing (capturing) tactics in reducing the number or severity of terrorist attacks against different target sets.

More specifically, the article examines the relative impact two counter-terrorism approaches – killing and capturing – have on several measures of effectiveness. To break war-fighting into various tactics applied against various targets the study examines troop levels in Afghanistan and Iraq, drone strikes, and terrorist group decapitations. To examine the range of policing actions we examine several variants of arrests, those of the traditional sort, renditions, and numbers of enemy/illegal combatants held. As a control we consider also defensive counter-terrorism measures. Because these different tactics may have different effects on different aspects of terrorism, we use numerous specifications for judging policy effectiveness,

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<sup>2</sup> David Omand, *Securing the State* (Oxford: Oxford University Press, 2010), p. 98.

including several measures capturing incidences of terrorist acts and several capturing the severity and/or complexity of terrorist acts as well as further specifications to consider differences in aspects among different location. We then compare the different models in order to draw conclusions given the general difficulty in evaluating counter-terrorism effectiveness in the face of limited data.

The primary findings of our analysis is that both killing and capturing have components that have large effects, but that these effects vary based on the specifics of who is targeted (wide-net versus targeted) as well as the terrorists' own targeting strategies (location, type of attack). The most interesting specific findings are that drone strikes seem counter-productive for counter-terrorism while renditions seem effective. However, the effects of offensive tactics were dwarfed by the effect of increased defenses, which reduce attacks in the West in quantity and quality while redirecting these attacks to other areas in the world, especially the frontline wars of the GWOT.

## **BACKGROUND AND SCOPE OF STUDY**

There is a surprisingly small literature that explores this theme on either a macro-scale, as this study does, or a micro-scale. What literature does exist generally builds on studies of repression-rebellion,<sup>3</sup> though this literature itself often fails to further specify specific repression tactics or types.<sup>4</sup> Nonetheless this research has informed our perspective on how various types of repression influence the activities of a targeted group (terrorists, guerrillas, civil society, etc.), from their mobilization, radicalization, and tactical repertoires<sup>5</sup> to whether

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<sup>3</sup> For example see Ted R. Gurr, *Why Men Rebel* (Princeton, NJ: Princeton University Press, 1970); Mark I. Lichbach, "Deterrence or Escalation? The Puzzle of Aggregate Studies of Repression and Dissent," *Journal of Conflict Resolution*, Vol. 31, No. 2 (1987), pp. 266-297; Erich Weede and Edward N. Muller, "Rebellion, Violence and Revolution: A Rational Choice Perspective," *Journal of Peace Research*, Vol. 35, No. 1 (1998), pp. 43-59.

<sup>4</sup> Mohammed M. Hafez and Joseph M. Hatfield, "Do Targeted Assassinations Work? A Multivariate Analysis of Israel's Controversial Tactic during Al-Aqsa Uprising," *Studies in Conflict and Terrorism*, Vol. 29, No. 4 (2006), pp. 359-382, here 360.

<sup>5</sup> Christian Davenport, Hank Johnston, and Carol Mueller, *Repression and Mobilization* (Minneapolis: University Of Minnesota Press, 2005); Doug McAdam, *Political Process and the Development of Black Insurgency, 1930-1970* (Chicago, IL: University of Chicago Press, 1982); Charles Tilly, *From Mobilization to Revolution* (Reading: Addison-Wesley, 1978).

they fragment, disintegrate, or surrender.<sup>6</sup> Drawing on these studies, the literature of more direct relevance to this article's theme tends to focus mainly, and often even solely, on group "leaders"<sup>7</sup> and whether killing them is effective at reducing group activity (measured in various ways). Nevertheless, occasionally this literature also looks at whether killing or capturing such leaders is more effective for counter-terrorism.

Yet while leaders are important, the extent to which they are important varies with many factors. Most obviously their importance varies based on organizational type and structure, especially whether the organization is vertically organized and hierarchical or horizontally organized around "hubs".<sup>8</sup> Byman goes so far as to claim 'true decapitation is no longer possible' given contemporary organizational structures.<sup>9</sup> One important scientific finding for the contemporary GWOT is that leaders matter less in religiously based organizations.<sup>10</sup> Given the current primary global terrorist threat is jihadist, this implies a focus on leaders in an analysis would miss out on possibly more significant factors for the organizational effectiveness of terrorist groups and thus for counter-terrorism policy.

Yet there are few studies that focus on the larger terrorist organization or movement (aside from the recruitment literature) and the targeting of its members. However, one factor in the current literature that somewhat mitigates this oversight is the failure to adapt a uniform definition of what a leader is in order to thereby identify leaders.<sup>11</sup> Some studies focus on only

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<sup>6</sup> Martha Crenshaw, "How Terrorism Declines," *Terrorism and Political Violence*, Vol. 3, No. 1 (1991), pp. 69-87; Jenna Jordan, "When Heads Roll: Assessing the Effectiveness of Leadership Decapitation," *Security Studies*, Vol. 18, No. 4 (2009), pp. 719-755, here 745.

<sup>7</sup> Assaf Moghadam, "How Al Qaeda Innovates," *Security Studies*, Vol. 22, No. 3 (2013), pp. 466-497, here 473.

<sup>8</sup> Kathleen Carley, Ju-Sung Lee, and David Krackhardt, "Destabilizing Networks," *Connections*, Vol. 24, No. 3 (2002), pp. 79-92; Moghadam, "How Al Qaeda Innovates"; Jordan, "When Heads Roll," p. 729.

<sup>9</sup> Daniel Byman (2006) "Do Targeted Killings Work?" *Foreign Affairs*, Vol. 85, No. 2 (2006), pp. 95-111, here 100.

<sup>10</sup> Jordan, "When Heads Roll"; Langdon, Lisa; Alexander J. Sarapu and Matthew Wells "Targeting the Leadership of Terrorist and Insurgent Movements: Historical Lessons for Contemporary Policy Makers," *Journal of Public and International Affairs*, Vol. 15 (Spring 2004), pp. 59-78, here 70; for dissenting opinion see Bryan C. Price "Targeting Top Terrorists: How Leadership Decapitation Contributes to Counterterrorism," *International Security*, Vol. 36, No. 4 (2012), pp. 9-46, here 40.

<sup>11</sup> Patrick B. Johnston (2012) "Does Decapitation Work? Assessing the Effectiveness of Leadership Targeting in Counterinsurgency Campaigns," *International Security*, Vol. 36, No. 4 (2012), pp. 47-79, here 53-4.

the very top leadership,<sup>12</sup> which has the advantage of being more easily defined but the disadvantage of being less important for clandestine organization, which tend toward flat and cellular organizational structures. Other scholars take a broader view and look at “operational leaders”,<sup>13</sup> which likely has greater importance for organizational effectiveness in the immediate term, but which risks improper classification of persons as “leaders”. Because of this one can find studies that identify as many as 151 targeted killings in 44 months in just one country<sup>14</sup> to other studies that identify only 204 such decapitations over 38 years world-wide.<sup>15</sup> This definitional issue arises because, as Lehrke points out, at some level every combatant (irrespective of whether classified as an enemy combatant or an “unlawful” combatant) is both a leader and a follower of others.<sup>16</sup>

Based on this observation, this study attempts to look not only at leaders but also at the larger terrorist organizations or movements, to first see how war-fighting (killing) versus policing (capturing) tactics at the macro-level influence the overall GWOT by targeting different terrorist suspects in different ways. This study seeks to understand the strategic level before future studies move onto examining the tactical level. It thus avoids comparability issues by not so much seeking to challenge the current literature directly, but rather to complement it, push its boundaries, and direct its agenda.

Furthermore, in the above discussion two factors emerged that are of importance when conducting an analysis of this sort, and especially when differentiating this study from other studies as well as for deriving policy implications. These are time and location. First is the

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<sup>12</sup> For example see Langdon, Sarapu, and Wells, “Targeting the Leadership of Terrorist and Insurgent Movements”.

<sup>13</sup> For example see Jordan, “When Heads Roll”. On this also in practice see Byman, “Do Targeted Killings Work?”

<sup>14</sup> Jordan, “When Heads Roll”; compare to Byman, “Do Targeted Killings Work?” who finds 203 killings in the same country from 2000-05.

<sup>15</sup> Price, “Targeting Top Terrorists”. Naturally none of the cited authors claim to have included all decapitations in their data, but the data differences are still notable and, if nothing else, call into question the comparability of the studies and their findings.

<sup>16</sup> Jesse Lehrke, “A Cohesion Model for Assessing Military Arbitration of Revolutions,” *Armed Forces & Society*, Vol. 40, No. 1 (2014), pp. 146-167, here 152 and 156. See also Leonard V. Smith, *Between Mutiny and Obedience: The Case of the French Fifth Infantry Division during World War I* (Princeton, NJ: Princeton University Press, 1994), p.16.

observation that terrorism is different in every era.<sup>17</sup> This is true regarding all of its aspects, from mobilization and recruitment to strategies and effectiveness. This raises comparability issues not only across the different studies in the literature, but also within studies that attempt to examine terrorism across time spans of several decades (often done in order to get more observations for statistical analysis). In the context of the decapitation literature Mannes concluded that ‘comparing these [religious] organizations to the relatively small terrorist radicals in Europe during the Cold War may not be appropriate’.<sup>18</sup>

This study follows from these observations by examining only the current terrorism era; that is the era of “New Terrorism” and the Global War on Terrorism following the attacks of 11 September 2001 (hereafter 9/11).<sup>19</sup> This era is characterized by high diffuse threats across the globe<sup>20</sup> coming mainly from jihadi affiliated terrorist groups, movements, or inspired cells or individuals. Nonetheless, one should not neglect that the GWOT has cast a wide-net and affected all terrorist – as well as criminal and even political – organizations. In many cases it has also led to more cooperation between even ideological diverse violent political organizations (though such cooperation has always existed, globalization and the global scope of the GWOT has merely increased it).<sup>21</sup> This wide-net does create some methodological issues, which will be commented on below.

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<sup>17</sup> Paul Furlong, “Political Terrorism in Italy: Responses, Reactions and Immobilism,” in Juliet Lodge, ed., *Terrorism: A Challenge to the State* (Oxford: Martin Robertson, 1981), p. 77; Victor Asal and R. Karl Rethemeyer, “The Nature of the Beast: Organizational Structures and the Lethality of Terrorist Attacks,” *The Journal of Politics*, Vol. 70, No. 2 (2008), pp. 437-449, here 447.

<sup>18</sup> Aaron Mannes, “Testing the Snake Head Strategy: Does Killing or Capturing its Leaders Reduce a terrorist Group’s Activity?” *The Journal of International Policy Solutions*, Vol. 9 (Spring 2008), pp. 40-49, here 44.

<sup>19</sup> Asal and Rethemeyer, “The Nature of the Beast”, 438 with references (Hoffman 1998; Laqueur 1998, 1999, 2004; Lesser et al. 1999; Simon and Benjamin 2000, 2001, 2002). Regarding the ‘post- 9/11 world’, satirist David Wong notes that ‘The sheer existence of that as an everyday term says it all’, the pervasiveness of which is easily illustrated by a Google search. David Wong, “The 6 Weirdest Things We’ve Learned Since 9/11,” *Cracked* (11 September 2013). Available at: <http://www.cracked.com/blog/the-6-weirdest-things-weve-learned-since-911/> [Accessed 10 September 2014].

<sup>20</sup> Byman, “Do Targeted Killings Work?” p. 107; Noëlle Quéniévet, “You Are the Weakest Link and We Will Help You! The Comprehensive Strategy of the United Nations to Fight Terrorism,” *Journal of Conflict & Security Law*, Vol. 11, No. 3 (2006), pp. 371-397, here 373, 383. For a concrete example see John Reid quoted in Mariaelisa Epifanio, “Legislative Response to International Terrorism,” *Journal of Peace Research*, Vol. 48, No. 3 (2011), pp. 399-411, here 400.

<sup>21</sup> Steven R. David, “Fatal Choices: Israel’s Policy of Targeted Killing,” *Mideast Security and Policy Studies*, No. 51 (September 2002). See also Paul Cruickshank, Tim Lister, and Per Nyberg, “The last days of a suicide

This leads to a second important factor, location. As is apparent in its very name, the GWOT is global in scope. As the United Nations High-level Panel on Threats, Challenges, and Change pointed out, in today's globalized world 'threats are interrelated and a threat to one is a threat to all'.<sup>22</sup> It is thus appropriate to look at data on a global scale. However the effects of the GWOT are not necessarily global. Jihadi terrorists have targeting preferences which they strategically choose between. These could be provisionally (and broadly) ranked as being, first-most, targets in the West itself, then Western targets no matter their physical location, followed by "collaborationist" regime targets, and so on.<sup>23</sup> But states also have some influence on the location of the fight, for instance, by attempting to deter terrorists through increased defensive measures<sup>24</sup> or creating "honey-pots" to attract terrorist activities to one (low value) location.<sup>25</sup> Following from these observations this study seeks also to compare the different effects the kill-capture tactics have on different "target sets" across the globe; perhaps even how a given approach shifts the burden (i.e. cost in terms of lives) of the war to other locations.

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bomber," *CNN Security Clearance*, 9 December 2011. Available at: [security.blogs.cnn.com/2011/12/09/the-last-days-of-a-suicide-bomber/](http://security.blogs.cnn.com/2011/12/09/the-last-days-of-a-suicide-bomber/) [Accessed 10 September 2014]; F.W. Horst, "Salafist Jihadism in Germany" (Herzliya, Israel: International Institute for Counter-Terrorism, 2011). Available at: [www.ict.org.il/Articles/tabid/66/Articlsid/887/currentpage/1/Default.aspx](http://www.ict.org.il/Articles/tabid/66/Articlsid/887/currentpage/1/Default.aspx) [Accessed 10 September 2014]; Leah Farrall, "Some thoughts on the printer plot and AQAP," (*The blog formerly known as*) *All Things Counter Terrorism* (01 November 2010). Available at: <http://allthingscounterterrorism.com/2010/11/01/some-thoughts-on-the-printer-plot-and-aqap/> [Accessed 10 September 2014].

<sup>22</sup> United Nations, *A More Secure World: Our Shared Responsibility. Report of the High-Level Panel on Threats, Challenges and Change*. A/59/565(2004) (New York: United Nations, 2004). Available at: [http://www.un.org/en/peacebuilding/pdf/historical/hlp\\_more\\_secure\\_world.pdf](http://www.un.org/en/peacebuilding/pdf/historical/hlp_more_secure_world.pdf) [Accessed 09 September 2014]. See also Wyn Rees and Richard J. Aldrich, "Contending Cultures of Counterterrorism: Transatlantic Divergence or Convergence?" *International Affairs*, Vol. 81, No. 5 (2005), pp. 905–23, here 923.

<sup>23</sup> Epifanio, "Legislative Response to International Terrorism," p. 399 (with reference to Berner 2007).

<sup>24</sup> On deterrence in terrorism see Alex Wilner, "Fencing in Warfare: Threats, Punishment, and Intra-war Deterrence in Counterterrorism," *Security Studies*, Vol. 22, No. 4 (2013), pp. 740-772. On its impossibility on a strategic level see Eric F. Taquechel and Ted G. Lewis, "How to Quantify Deterrence and Reduce Critical Infrastructure Risk," *Homeland Security Affairs*, Vol. 8, No. 12 (2012). Available at: <http://www.hsaj.org/?fullarticle=8.1.12> [Accessed 10 September 2014], 3.

<sup>25</sup> Iraq is a possible example. See for example Taquechel and Lewis, "How to Quantify Deterrence and Reduce Critical Infrastructure Risk". Compare to the idea of "isolating" in Byman, "Do Targeted Killings Work?"



A final issue that has complicated studies of this nature has been the definition of which organizations to include. As the reader is likely aware, there is no universally accepted definition of “terrorism”. Likewise, it is difficult to classify whether a given actor is an organization, a network, a movement, a cell, affiliate, or merely an inspired individual (the actions of the latter often being classified as mere “crime”).<sup>26</sup> Increasingly terrorism has taken on more of a network format, or even the structure of a movement, with independent terrorist innovators with fluid organizational affiliations.<sup>27</sup> This raises the question of whether one can or should even study individual terrorist groups. The answers to these questions have not only political and policy significance,<sup>28</sup> but significance for the results of any study relying on government data at some point in the collection process. This present study, because of its focus on a macro-level, on the GWOT with its occasionally indiscriminate scope of targets/suspects, and its resulting reliance on much government data, takes an inclusive definition that captures many organizational forms using political violence to varying extents against state actors.<sup>29</sup> This approach helps offset the aforementioned wide-net issue. Nonetheless, we have included some more specified outcomes variables to see if the overall effects hold true also in more clearly defined jihadi cases (see below).

## **THEORY AND HYPOTHESES**

This study draws its insights from the studies in the aforementioned literature strains. The primary difficulty herein is that one can find a study with evidence supporting almost any proposition about terrorism. The targeted killing literature is split on whether this specific tactic is effective or not, even when they agree (which is not often) about how to measure that effectiveness. More broad research on repression has found it to have ‘every single influence on behavioral [sic] challenges, including no influence’.<sup>30</sup> While we will limit some of these

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<sup>26</sup> Brian A. Jackson, “Groups, Networks, or Movements: A Command-and-Control-Driven Approach to Classifying Terrorist Organizations and Its Application to Al Qaeda,” *Studies in Conflict and Terrorism*, Vol. 29, No. 4 (2006), pp. 241-262.

<sup>27</sup> Moghadam, “How Al Qaeda Innovates,” pp. 466-7.

<sup>28</sup> Jackson, “Groups, Networks, or Movements,” p. 242.

<sup>29</sup> For a similar approach see Langdon, Sarapu, and Wells, “Targeting the Leadership of Terrorist and Insurgent Movements” and Mannes, “Testing the Snake Head Strategy”.

<sup>30</sup> Christian Davenport and Molly Inman, “The State of State Repression Research Since the 1990s,” *Terrorism and Political Violence*, Vol. 4, No. 1 (2012), pp. 619-34, here 624.

problems by our temporally delineated yet strategic level global examination of a macro-level phenomenon, formulating a manageable number of competing hypotheses is challenging.

Before laying out our hypotheses, it is useful to comment on the outcome these will speak about, as doing so in advance will allow precise wording of the hypotheses that will ensure they are broad and inclusive enough so as to be few in number, yet flexible enough that we can expand on them and further specify their different aspects in the discussion. As will be clear in the statement of the hypotheses, we test for both the number (quantity) of attacks and the severity (quality) of those attacks (persons killed), as well as some specifications to elaborate even further on the qualitative sophistication of those attacks (e.g. coordinated attacks and deaths ratios). Additionally each hypothesis is tested for several different target sets, meaning many of the quantitative and qualitative outcomes have several different specifications that differ in their geographical or spatial scope. The outcome variables are laid out in more detail below.

The first perspective we will consider is that killing is effective.<sup>31</sup> Typically following from the resource endowments perspective of organizational theory,<sup>32</sup> this perspective claims that killing members and affiliates of potentially violent political organizations reduces the capabilities of the organization to conduct attacks, in terms of their quantity and/or quality. From another view, killing also functions by increasing costs for a given action and thus deterring that action.<sup>33</sup> Thus advocates of this view hold that:

*H1 Killing is effective*

Killing more members or affiliates of terrorist organizations leads to less numerous and/or severe terrorist attacks for a given target set.

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<sup>31</sup> Asal and Karl Rethemeyer, "The Nature of the Beast"; Johnston, "Does Decapitation Work?"; Langdon, Sarapu, and Wells, "Targeting the Leadership of Terrorist and Insurgent Movements," p. 75; Price, "Targeting Top Terrorists". Note that the arguments and findings of all authors cited in this section are more complex than presented here; none claim a straight linear relationship or that the policy they found to be best is a "silver bullet".

<sup>32</sup> Hafez and Hatfield, "Do Targeted Assassinations Work?" pp. 365-6.

<sup>33</sup> Hafez and Hatfield, "Do Targeted Assassinations Work?" with references (Hibbs 1973; Oberschall 1973; Oliver 1980; Hardin 1982).

There is a counter-argument that killing is not only ineffective, but even counter-productive for all purposes except maybe some psychological needs (e.g. revenge).<sup>34</sup> This perspective is often rooted in theories of backlash mobilization.<sup>35</sup> In this view, those killed become martyrs for the cause and increase a group's recruitment potential and radicalization while also inspiring revenge attacks.<sup>36</sup> An additional interesting perspective on this is that killing group members, especially leaders, can make way for younger members, who may be more innovative and, moreover, more risk-loving/seeking.<sup>37</sup> Lastly there is a view that such killings, which represent a threat, drive a group to become more cohesive and to go further underground, both of which tend to make a group more dangerous, though possibly less effective at sophisticated operations.<sup>38</sup> Thus there is the possibility that:

*HIA Killing is counter-productive*

Killing more members or affiliates of terrorist organizations leads to more numerous and/or severe terrorist attacks for a given target set.

However, the manner of killing and target of repression matter for outcomes.<sup>39</sup> Thus we will consider several variants of the overall "kill" approach. Broadly these are: drone strikes, decapitations, and troop levels (each with sub-components discussed in the variable section below). Regarding decapitation, these might reduce quality while increasing quantity due to

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<sup>34</sup> Hafez and Hatfield, "Do Targeted Assassinations Work?"; David, "Fatal Choices".

<sup>35</sup> Davenport, Johnston, and Mueller, *Repression and Mobilization*; Ronald A. Francisco, "The Relationship between Coercion and Protest: An Empirical Evaluation in Three Coercive States," *Journal of Conflict Resolution*, Vol. 39 (June 1995), pp. 263-282; Ronald A. Francisco, "Coercion and Protest: An Empirical Test in Two Democratic States," *American Journal of Political Science*, Vol. 40 (November 1996), pp. 1179-1204. See also Hafez and Hatfield, "Do Targeted Assassinations Work?" with references to Gamson et al., 1982, Goldstein 1983, and Oliviers 1990, 1991.

<sup>36</sup> Byman, "Do Targeted Killings Work?" p. 99.

<sup>37</sup> For the example of ETA see Alexander Spencer, *The Problems of Evaluating Counter-Terrorism*, UNISCI (Research Unit on International Security and Cooperation) Discussion Papers, No. 12 (Madrid: Universidad Complutense Madrid, October 2006). Available at: <http://epub.ub.uni-muenchen.de/13771/1/UNISCISpencer12.pdf> [Accessed 10 September 2014].

<sup>38</sup> Mette Eilstrup-Sangiovanni and Calvert Jones, "Assessing the Dangers of Illicit Networks," *International Security*, Vol. 33, No. 2 (2009), pp. 7-44; Price, "Targeting Top Terrorists". See also the military sociology literature on group cohesion.

<sup>39</sup> Langdon, Sarapu, and Wells, "Targeting the Leadership of Terrorist and Insurgent Movements," p. 75; Hafez and Hatfield, "Do Targeted Assassinations Work?" p. 363 (with reference to Mason and Krane 1989).

the symbolic importance of the deaths, the aforementioned risk-seeking of younger successors, and a simultaneous reduction in organizational capability (i.e. ability to conduct sophisticated operations).

Drone strikes are perceived by a population to be a very one-sided, unfair, and unjust means of exemplary and even punitive power, one which often has collateral damage associated with it. Hafez and Hatfield (2006) associate such unjustness and perceived inability to fight back as contributing to a perception of severity and thereby to the potential for backlash mobilization.<sup>40</sup> Thus, drone strikes also may lead to an increase in quantity of attacks while reducing their severity.

The influence of troop levels is more complicated. On the one hand it increases the number of targets and thus can be expected to increase terrorist activity in the short-term at least and for the target set of countries where troops are active. On the other hand their presence should over time reduce terrorist activity, either because terrorists are killed or captured or because they engage in inter-temporal transference and go underground for a period of time.

Moving on, another school of thought holds that capturing terrorists is a more effective counter-terrorism tactic.<sup>41</sup> This group often cites the prominent examples of the Shining Path, PKK, and Red Brigades as proof of the success of arresting leaders in particular. Capturing is seen as limiting backlash mobilization. Furthermore, this view holds that captured individuals can provide intelligence that enable follow-on counter-terrorism operations and thus reduce terrorist activity.<sup>42</sup> There is also a view that, especially regarding leaders, seeing ones comrades imprisoned and in control of the state can lead to demoralization amongst a group.<sup>43</sup> This view thus holds that:

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<sup>40</sup> Hafez and Hatfield, "Do Targeted Assassinations Work?" p. 378.

<sup>41</sup> Audrey Kurth Cronin, "How Al-Qaida Ends: The Decline and Demise of Terrorist Groups," *International Security*, Vol. 31, No. 1 (2006), pp. 7-48, here 22; Jordan, "When Heads Roll," p. 736; Mannes, "Testing the Snake Head Strategy".

<sup>42</sup> Byman, "Do Targeted Killings Work?" pp. 98-9; on killings' damage to Israeli intelligence operations see David, "Fatal Choices," p. 10.

<sup>43</sup> Cronin, "How Al-Qaida Ends," p. 30; Steve Hutchinson and Pat O'Malley, *How Terrorist Groups Decline* (Ottawa: Canadian Centre for Intelligence and Security Studies, Norman Paterson School of International Affairs, Carleton University, 2007), p. 6. See also Price, "Targeting Top Terrorists".

*H2 Capturing is effective*

Capturing members or affiliates of terrorist organizations leads to less numerous and/or severe terrorist attacks for a given target set.

There is less theory behind the next hypothesis, but it must be considered for balance. This view would thus hold that capturing terrorists leads to more terrorist activity. Perhaps a group is inspired to engage in more actions in order to gain leverage over the state and thus negotiate for the release of their comrades. There is also, especially among younger persons imprisoned for minor terrorist support activities, the risk of radicalization while imprisoned and a retrenched commitment to more severe terrorist activity upon re-release.<sup>44</sup> Thus, this perspective would claim that:

*H2A Capturing is counter-productive*

Capturing more members or affiliates of terrorist organizations leads to more numerous and/or severe terrorist attacks for a given target set.

The manner of capturing may be less critical as the manner of killing in influencing outcomes, but nonetheless we consider several factors that broadly fall in the areas of: arrests, prisoners of war (POWs), and renditions. Arrests as such are mostly captured in H2 and H2A. However, differentiation will be made between arrests made in the West, versus arrests made in the rest of the world, and the total of both, as this may affect our various target sets differently. The effect of POWs is also captured in H2 and H2A, but this also would most likely affect the target set in war zones and less so targets in the West. Renditions represent a perceived injustice, but tend to be used only against high-value terrorist suspects. Thus, they may be likely to provoke a similar effect as decapitation: a higher number of attacks, but a lower

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<sup>44</sup> See for example Greg Hannah, Lindsay Clutterbuck, and Jennifer Rubin, *Radicalization or Rehabilitation: Understanding the challenge of extremist and radicalized prisoners* (Cambridge, UK: RAND Europe, 2008). Available at: [http://www.rand.org/pubs/technical\\_reports/TR571.html](http://www.rand.org/pubs/technical_reports/TR571.html) [accessed 08 September 2014]; Elizabeth Mulcahy, Shannon Merrington, and Peter Bell, "The Radicalisation of Prison Inmates: Exploring Recruitment, Religion and Prisoner Vulnerability," *Journal of Human Security*, Vol. 9, No. 1 (2013), pp. 4-14; Peter R. Neumann, *Prisons and Terrorism: Radicalisation and De-radicalisation in 15 Countries* (London, International Centre for the Study of Radicalisation and Political Violence, Kings College, 2010). Available at: <http://icsr.info/wp-content/uploads/2012/10/1277699166PrisonsandTerrorismRadicalisationandDeradicalisationin15Countries.pdf> [Accessed 08 September 2014].

quality of those attacks. However, the secrecy around renditions may lead to uncertainty in a terrorist group that could lead them to rearrange their plans for fear they have been compromised.

While this study focuses its examination on two policies that could be classified as falling on the offensive side of counter-terrorism activities – killing and capturing – there is also a defensive side to counter-terrorism<sup>45</sup> and it is possible it is increased defenses that have contributed most to counter-terrorism.<sup>46</sup> The defense perspective thus claims that:

*H3 Defenses are effective*

Increased defensive measures among preferred target states lead to less numerous and/or severe terrorist attacks for a given target set.

However, given the phenomena of target transference or substitution,<sup>47</sup> it is possible that such defensive measures are simply re-directing terrorist activities to another target set. Thus, through different specifications of the outcome variables, we will consider also the possibility that:

*H3A Defenses are not ultimately effective*

Increased defensive measures among preferred target states lead to more numerous and/or severe terrorist attacks for a given target set.

It goes without saying that we are also open to the null hypothesis that any one or all of the above factors have no significant influence at all.<sup>48</sup> It is also possible that all the hypotheses are true (though their level of influence would still vary), in which case we will pay special

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<sup>45</sup> Todd Sandler and Kevin Siqueira, “Games and Terrorism: Recent Developments,” *Simulation & Gaming*, Vol. 40, No. 2 (2009), pp. 164-192, here 165.

<sup>46</sup> Hafez and Hatfield, “Do Targeted Assassinations Work?” p. 378.

<sup>47</sup> Subhayu Bandyopadhyay and Todd Sandler, “The Interplay between Preemptive and Defensive Counterterrorism Measures: A Two-Stage Game,” *Economica*, Vol. 78, No. 311 (2011; online first 2009), pp. 546-564, here 548; Sandler and Siqueira, “Games and Terrorism,” pp. 334, 338, 340.

<sup>48</sup> For example Hafez and Hatfield, “Do Targeted Assassinations Work?” find no effect.

attention to how specific variables used to capture each hypotheses may interact with each other and be used to form part of an integrated and balanced counter-terrorism policy.<sup>49</sup>

In way of qualification, while this study will reveal the relationship between the independent variables and the outcome variables, it cannot definitively say what the outcome variables themselves mean for the ultimate success of the GWOT. For example, while a reduction in the number of attacks may be seen as indicating policy effectiveness, it could instead simply indicate inter-temporal transference<sup>50</sup> as terrorist groups with ‘cosmic’ time-frames<sup>51</sup> wait for a better opportunity to strike, possibly devoting their time and energy to planning a spectacular event.<sup>52</sup> Likewise, more attacks may not indicate that a policy has failed and terrorism is on the upswing, but rather that groups are in their “death throws” and making one last desperate push.<sup>53</sup> These longer term questions must wait for the accumulation of more time and data before they can be answered.

## **DATA AND VARIABLES**

As always when researching the murky world of terrorism and counter-terrorism the collection of data is problematic.<sup>54</sup> For many variables we were able to obtain fairly precise numbers, though the use of year data rather than month data obscures much variation. For other variables where data was more difficult to obtain we used the officially reported

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<sup>49</sup> Bandyopadhyay and Sandler, “The Interplay between Preemptive and Defensive Counterterrorism Measures,” p. 24; Byman, “Do Targeted Killings Work?” especially p. 107; Hafez and Hatfield, “Do Targeted Assassinations Work?” p. 365; Johnston, “Does Decapitation Work?”; Mannes, “Testing the Snake Head Strategy,” especially p. 44. Note the page references for Bandyopadhyay and Sandler 2009[2011] are taken from the publically available 2009 version.

<sup>50</sup> Walter Enders and Todd Sandler, *The Political Economy of Terrorism*, 2<sup>nd</sup> edition (Cambridge: Cambridge University Press, 2012), especially p. 177; Todd Sandler, Daniel G. Arce, and Walter Enders, *Transnational Terrorism: Copenhagen Consensus 2008 Challenge Paper* (Copenhagen: Copenhagen Consensus Center, 2008). Available at: <http://create.usc.edu/research/58253.pdf> [Accessed 10 September 2014], p. 27.

<sup>51</sup> Mark Juergensmeyer, *Terror in the Mind of God: The Global Rise of Religious Violence* (Oakland, CA: University of California Press, 2003).

<sup>52</sup> For a related point and methodological implications see Mannes, “Testing the Snake Head Strategy”.

<sup>53</sup> Spencer, “The Problems of Evaluating Counter-Terrorism”.

<sup>54</sup> Daniel G. Arce, Rachel T.A. Croson, and Catherine C. Eckel, “Terrorism experiments,” *Journal of Peace Research*, Vol. 48, No. 3 (2011), pp. 373-82, here 373; Spencer, “The Problems of Evaluating Counter-Terrorism,” p. 186.

numbers even if these were likely underestimates (rarely the reverse). For qualitative determinations by the authors we also went with low estimates. We would rather report no significant findings and call for future research than report a significant finding where none exists (and thereby possibly influencing policy in the wrong way).

As this is a macro-level study some of the data is aggregated in a way which may obscure certain critical details, but this data is often only available in this fashion. A prime example would be the false classification of persons, organizations, and acts as “terrorist(s)” for political purposes or ex-post justification of counter-terrorism actions, which would inflate the numbers. Rather than try to fight this tendency, we chose to focus on the strategic GWOT level and thus also chose a dataset for our outcome variables that errs on the side of inclusiveness (see below). However, when possible we included some outcome specifications to look for a specific jihadi effect. The following sections describe the variables and any choices regarding their specification made by the researchers. Information on the data sources beyond what appear in the footnotes can be found in the publically available codebook.<sup>55</sup>

## **War-fighting Kill Approach**

### *Decapitation*

For decapitation (DECAPITATION), as non-area experts and to prevent correlation with other variables, we include only the very top leader(s), high-level “operational” leaders, or leaders of core elements or areas (i.e. ones critical to the organization and often with a dominating influence in the organization). However, given the non-hierarchical organization of many terrorists groups, occasionally other leaders were also counted if their positions were verifiably senior and high profile. We hope this focus prevents us from being swayed by government and media reports claiming every terrorist killed was a “senior leader”. It also prevents us from focusing on deaths in organizations which receive more media coverage; top leader deaths are most likely reported even for minor groups, while lower leader deaths will be reported only for high-profile terrorist campaigns. Despite that the effects on an

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<sup>55</sup> Codebook available at: <https://www.dropbox.com/s/qh3h2nddz6361s/Kill%20-%20Capture%20Codebook.doc?dl=0>

Dataset available at: <https://www.dropbox.com/s/xs3h9t9g3n7ujxd/Kill-Capture%20Dataset%2008.09.2014.xls?dl=0>



organization of deaths of leaders not attributable to counter-terrorism activities may have an effect on a terrorist group's activities, we chose not to include deaths of leaders from natural causes or internal disputes (the latter especially prevalent in al-Shabaab and the Continuity IRA). We include only terrorist groups on the US Department of State Foreign Terrorist Organization list, but excluded decapitations in the New People's Army, Shining Path, and Liberation Tigers of Tamil Eelam due to data concerns (lack of data or too many government claims of successful high-value targeted killing).

### *Drone Strikes*

The variable DRONE\_STRIKES uses relatively new data from the New America Foundation to look at the annual number of drone strikes in Pakistan and the border with Afghanistan, while YEMEN\_STRIKES looks at the number of aerial strikes (drone and manned) in Yemen and STRIKES\_TOTAL combines the two.<sup>56</sup> Likewise DRONE\_DEATHS\_AVERAGE (MILITANTS) looks at the number of militants (not civilian collateral damage) killed in drone strikes annually in the Pakistan region while the YEMEN\_DEATHS (MILITANTS) variable does the same for Yemen.<sup>57</sup>

### *Troop Levels*

This variable looks at annual troop levels in the two primary wars associated with the GWOT: Afghanistan and Iraq (AFG\_FOR\_TROOPS and IRAQ\_US\_TROOPS).<sup>58</sup> These numbers

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<sup>56</sup> New America Foundation, *Year of the Drone Pakistan Data Site* (2013). Available at: <http://counterterrorism.newamerica.net/drones> [accessed 18 June 2013].

<sup>57</sup> Additional variables included in the dataset but not used in the analysis here include: DRONE\_DEATHS\_MILITANTS(TOTAL) as well as DRONE\_DEATHS\_CIVILIAN(LOW) DRONE\_DEATHS\_CIVILIAN(HIGH). The later uses data from: The Bureau of Investigative Journalism, *Get the data: What the drones strike* (2014). Available at: <http://www.thebureauinvestigates.com/2014/05/23/get-the-data-what-the-drones-strike/> [accessed 08 September 2014]. The inclusion of civilian deaths is especially recommended for future studies.

<sup>58</sup> Source for Afghanistan data: Ian S. Livingston and Michael O'Hanlon, "Afghanistan Index: Also Including Selected Data on Pakistan," *Brookings Tracks Reconstruction and Security in Afghanistan, Iraq and Pakistan* (Washington, D.C.: The Brookings Institution, 2012). Available at: <http://www.brookings.edu/about/programs/foreign-policy/afghanistan-index> [Accessed 30 April 2014]. For Iraq

were taken as a proxy for the number of potential “terrorists” killed, since neither the US nor its allies report enemy “body counts”. Note that for Iraq we choose not to include the number of non-US foreign troops due to their high volatility over short-time frames, while in Afghanistan we consider only total foreign troops given this war was much more of a coalition endeavor. All troop levels are so-called “boots on the ground”, not troops in the “operations area” (e.g. aboard ships, nearby airbases). The data we gathered has much more variation than what some other scholars use, but is still annual data, an issue we return to later.<sup>59</sup>

## **Policing Capture Approach**

### *Arrests*

This variable draws on new and only recently available data collected by the Associated Press which we then sought to verify and supplement as required (especially when zeros were reported for a country-year).<sup>60</sup> We divided this data into three variables capturing annual

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data: Christopher Blanchard and Catherine Marie Dale, *Iraq: Foreign Contributions to Stabilization and Reconstruction*, CRS Report for Congress, RL32105 (Washington, D.C.: Congressional Research Service, 2007). Available at: <http://fpc.state.gov/documents/organization/99533.pdf> [accessed 08 September 2014]. For both countries: Amy Belasco, *Troop Levels in the Afghan and Iraq Wars, FY2001-FY2012: Cost and Other Potential Issues*, CRS Report for Congress, 7-5700 (Washington, D.C.: Congressional Research Service, 2009). Available at: <http://www.fas.org/sgp/crs/natsec/R40682.pdf> [Accessed 30 April 2014].

<sup>59</sup> As time progressed security responsibilities were gradually handed over to domestic forces and to capture this we also include in the dataset an annual count of the number of domestic security forces (AFG\_SECURITY\_FORCES and IRAQ\_SECURITY\_FORCES). However, we do not include analysis of this issue and data in this paper. Sources include Anthony H. Cordesman, Sam Khazai, and Daniel Dewit, *Shaping Iraq's Security Forces* (Washington, D.C.: Center for Strategic and International Studies, 2013). Available at: [http://csis.org/files/publication/131213\\_Iraq\\_Security\\_Forces.pdf](http://csis.org/files/publication/131213_Iraq_Security_Forces.pdf) [Accessed 30 April 2014]; James L. Jones (Chairman), *The Report of the Independent Commission of the Security Forces of Iraq* (Independent Commission of the Security Forces of Iraq, 6 September 2007). Available at: <http://csis.org/files/media/isis/pubs/isf.pdf> [Accessed 30 April 2014].

<sup>60</sup> Associated Press, *Anti-terror Arrests [Data file]*, last updated 29 September 2011 (2012). Available at: <https://www.documentcloud.org/documents/254008-anti-terror-arrests-raw-data.html> [accessed 18 June 2013]. Supplemented (especially when AP reported zeros and for 2011) with US Department of State annual country terrorism reports (<http://www.state.gov/g/ct/rls/crt/>) and EUROPOL EU Terrorism Situation and Trend Reports ([https://www.europol.europa.eu/search/apachesolr\\_search/EU%20terrorism%20situation%20and%20trend%20report](https://www.europol.europa.eu/search/apachesolr_search/EU%20terrorism%20situation%20and%20trend%20report)).

number of arrests on terrorism charges worldwide (ARRESTS\_TOTAL), the number of these arrests in Western countries (ARRESTS), and the number of arrests made in the rest of the world (ARRESTS\_ROW), though only the first two are used in any regressions.<sup>61</sup> We also examine a count of arrests of high-value persons (ARRESTS\_KEY), though our definition of “high value” was very restrictive.

### *Renditions*

The variable RENDITIONS includes the annual number of persons subjected to extraordinary rendition according to a recently released report.<sup>62</sup> In addition to numbers of persons in the program we also divided the rendition program into five phases (RENDITION\_REGIME) based on which legal framework covered it. These frameworks, which generally restricted rendition policy as time passed, are: no framework to August 2002; first Justice Department Office of Legal Counsel (OLC) (“Bybee”) memo from August 2002; second OLC memo from December 2004; Bush’s Executive Order (EO) of July 2007 reauthorizing the program but with a few more constraints; and Obama’s EO from January 2009 (no torture, detention facilities closed, etc.).<sup>63</sup>

### *POWs*

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<sup>61</sup> We include in the dataset also information on US prosecutions on terrorism charges (US\_PROSECUTIONS) and the number of legal extraditions to the US from other countries (EXTRADITIONS\_US(CONVICTED)). However, this data was not included in our analysis as their inclusion raised certain biases or correlation issues with variables of more central concern to our examination. Data from: Transactional Records Access Clearinghouse (TRAC), *As Terrorism Prosecutions Decline, Extent of Threat Remains Unclear* (Syracuse, NY: TRAC Reports, Inc., 2010). Available at: <http://trac.syr.edu/tracreports/terrorism/231/> [Accessed 30 April 2014]; *The Washington Post*, “Terrorism Convictions in U.S. Courts,” 30 March 2013. Available at: [http://www.washingtonpost.com/world/national-security/terrorism-convictions-in-us-courts/2013/03/30/2174b072-9983-11e2-814b-063623d80a60\\_graphic.html](http://www.washingtonpost.com/world/national-security/terrorism-convictions-in-us-courts/2013/03/30/2174b072-9983-11e2-814b-063623d80a60_graphic.html) [Accessed 30 April 2014].

<sup>62</sup> Open Society Justice Initiative, *Globalizing Torture: CIA Secret Detention and Extraordinary Rendition* (New York: Open Society Foundations, 2013). Available at: <http://www.opensocietyfoundations.org/reports/globalizing-torture-cia-secret-detention-and-extraordinary-rendition> [Accessed 10 September 2014]. We also experimented with lagging this variable given the secrecy of the programme and its possible provision of longer-term intelligence (RENDITIONS\_LAG) but this did not prove useful. Nonetheless, the variable is retained in the dataset.

<sup>63</sup> In a simpler attempt to capture the legal regime we included a dummy for whether it was before 2006, or 2006 and later (RENDITION\_POST2006), as this was the year that the rendition programme became public and thus controversial. However, this variable does not appear in the analysis.

This variable captures the estimated annual number of prisoners of war (TOTAL\_POWS) held in relation to the war on terror. Though not used in our analysis we include in the dataset also sub-variables that break the total down for scholars interested in a finer analysis. The sub-variables look at prisoners held in Bagram Theater Internment Facility, also called the Parwan Detention Facility, in Afghanistan (BAGRAM); Guantanamo Bay Detention Camp in Cuba (GITMO)<sup>64</sup>; and all prisoners held at facilities in Iraq (IRAQ\_PRISONERS).

### **Defensive Approach**

The control variable for defensive measures (DEFENSES\_LAGGED) is taken from Epifanio's *Legislative Response to International Terrorism* (LeRIT) dataset.<sup>65</sup> LeRIT uses a dummy variable to code for the presence/absence of thirty different possible restrictive regulations that are used for defensive counter-terrorism purposes in 20 OECD countries.<sup>66</sup> The majority of these regulations are intended to deter through punishment or denial and thus should not correlate directly with arrests. Since our focus is global, with special concern for Western targets, we take the annual average. We lag this by one year given implementation times for such regulations. Data was not available for the final two years, thus we kept the numbers constant pending further research.

### **Outcome Variable: Attack Quantity and Quality**

The outcome variables are drawn from the Global Terrorism Database (GTD), National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the

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<sup>64</sup> The New York Times and NPR, *The Guantánamo Docket* (2014). Available at: <http://projects.nytimes.com/guantanamo> [Accessed 30 April 2014].

<sup>65</sup> Epifanio, "Legislative Response to International Terrorism". Data available at: <http://www.prio.no/Research-and-Publications/Journal-of-Peace-Research/Replication-Data/>.

<sup>66</sup> For a list of these regulations see: <http://www.polsci.org/epifanio/codebook.pdf>. On the defensive nature of these measures see Eric Neumayer, Thomas Plümper, and Mariaelisa Epifanio, "The 'Peer-Effect' in Counterterrorist Policies," *International Organization*, Vol. 69, No. 1 (2014), pp. 209-32. Available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2107192](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2107192) [accessed 10 September 2014], here 13 (page reference from publically available version).

University of Maryland.<sup>67</sup> As mentioned, this dataset errs on the side of inclusiveness.<sup>68</sup> In combination with underestimating any questionable independent variables, this should ensure we do not overstate the significance of any findings. For brevity the outcome variables are best outlined in table form (Table 1). The variations on possible outcomes include specifications not only of total attacks, but also of attacks in specific places (or total minus specific places, e.g. war zones) and by specific ideologically oriented groups (i.e. jihadists) as well as several deaths-per-attack ratios (capturing a degrading terrorist capability even in the presence of backlash mobilization) and coordinated attack variables (capturing organizational capability). As will be discussed in the methodology section below, we ran numerous models with different independent and outcome variables, often using the results of previous models to guide the next model and discover possibly interesting relationships. We believe that by comparing the models in light of our theory we can draw some conclusions on policy effectiveness even given how difficult this is to do for counter-terrorism due to data limitations and questions about what effectiveness even means. Not all outcome variables proved useful for the current analysis and Table 1 indicates which appear only in the dataset.

**Table 1** Outcome Variables (*italics indicates inclusion in dataset but not analysis*)

ATTACKS_TOTAL (IN_WEST)	Terrorist attacks in Western countries, annual count
<i>ATTACKS_TOTAL</i> <i>(WESTERN_TARGET)</i>	Terrorist attacks against Western targets worldwide, annual count
<i>ATTACKS_JIHADI</i> <i>(WESTERN_TARGET)</i>	Jihadist terrorist attacks against Western targets worldwide, annual count
ATTACKS_WORLD_JIHADI	Total Jihadist terrorist attacks worldwide, annual count
ATTACKS_WORLD_TOTAL	Total terrorist attacks worldwide, annual count
ATTACKS_WARZONES	Total terrorist attacks in Iraq and Afghanistan, annual count
<i>ATTACKS_WORLD_TOTAL-WARS</i>	Total terrorist attacks worldwide excluding those in Iraq and

<sup>67</sup> National Consortium for the Study of Terrorism and Responses to Terrorism (START) *Global Terrorism Database [Data file]* (2013). Available at: <http://www.start.umd.edu/gtd> [Accessed 18 June 2013].

<sup>68</sup> Gary LaFree and Laura Dugan, "Introducing the Global Terrorism Database," *Terrorism and Political Violence*, Vol. 19, No. 2 (2007), pp. 181-204, here 187.

	Afghanistan, annual count
<i>ATTACKS_COORDINATED_WORLD</i>	Total terrorist attacks consisting of multiple simultaneous coordinated attacks, annual count
<i>DEATHS_IN_CORD-ATTACKS</i>	Total deaths in coordinated attacks, annual scale
<i>DEATHS-PER-CORD-ATTACK</i>	Deaths-per-coordinated attack, annual scale
<i>DEATHS_WORLD</i>	Total deaths in terrorist attacks worldwide, annual scale
<i>DEATHS-PER-ATTACK</i>	Deaths-per-terrorist attack worldwide, annual scale

## **METHODOLOGY AND STATISTICAL ANALYSIS**

For the quantitative analysis we tried several different types of regression analysis to capture the effects of different explanatory factors on the dependent variables. A simple Ordinary Least Squares (OLS) (cross-sectional analysis) fits the data quite well, which we consider an advantage given this methods accessibility to the non-quantitatively inclined. To see in how far other approaches may fit the data better, we also included non-linear models and other distributions which are more tolerant against data bias (Poisson model/Negative Binomial model), but did not find improved results.

For each dependent variable, we stepwise included – starting with *RENDITIONS* – additional variables into our analysis to see in how far the overall fit of the model improves, and in how far these additional variables are significant, contributing to the explanatory value of the model. However, as pointed out by Mannes amongst others, counter-terrorism tactics (our variables) are rarely pursued in isolation but occur as part of an integrated campaign or simultaneous crackdown on multiple fronts.<sup>69</sup> This leads to some correlation between independent variables. In these cases we selected the one which we included – due to the high

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<sup>69</sup> Mannes, “Testing the Snake Head Strategy.”

degree of correlation also proxying for the other indicators – while the other variables were used for robustness tests.

In total approximately two dozen regressions contributed to our analysis (not all displayed), while we experimented with numerous other specifications to ensure our approach was scientifically best. Our purpose in running such a number of regressions was to ensure consistency of the findings across differently specified models and thereby draw conclusions even given the small dataset. Overall all models gave more or less the expected confirmation of the results of models displayed below, most importantly: significant coefficients, consistent direction of the sign, and a high explanatory value of the model, expressed e.g. in a high  $R^2$ .

The results of the most illuminating and significant models are displayed in the Tables 2 and 3, with the former focusing on results with “quantitative” outcomes, as in numbers of attacks, and the latter on “qualitative” outcomes, as in severity/complexity of attack. This manner of presentation was chosen to facilitate comparison of the kill and capture independent variables, as well as comparison of target sets, as these comparisons were most interesting (versus comparing quantitative and qualitative outcomes). Table 4 presents a final check of the most significant findings against one another, including also a final check on another specification of arrests. These and the results of other models not displayed, and moreover the relationship between the models, are discussed in detail in the following section.

**Table 2** Results of statistical analysis (quantitative outcomes)

	i	ii	Iii	iv	V	vi	vii
<b>VARIABLE</b>	<b>ATTACKS_</b> <b>WORLD_TOTAL</b>	<b>ATTACKS_</b> <b>WORLD_TOTAL</b>	<b>ATTACKS_</b> <b>TOTAL(IN_WEST)</b>	<b>ATTACKS_</b> <b>WARZONES</b>	<b>ATTACKS_</b> <b>WARZONES</b>	<b>ATTACKS_</b> <b>WARZONES</b>	<b>ATTACKS_</b> <b>WARZONES</b>
<b>CONSTANT</b>	1721,861 (1397,484)	1854,026* (754,736)	352,883*** (71,254)	-223,779 (246,606)	-199,139 (251,734)	-228,593 (162,364)	-95,269 (202,975)
<b>ARRESTS_TOTAL</b>		,228** (,068)	,009** (,003)			,010 (,007)	,012 (,008)
<b>ARRESTS_WEST</b>	,657 (1,562)						
<b>RENDITIONS</b>	-36,182 (25,055)	-13,840 (13,423)	-1,228 (1,219)	-11,103** (4,038)	-10,577 ** (3,884)	-12,762** (2,326)	-9,223** (3,028)
<b>DECAPITIZATION</b>	15,459 (78,479)	-63,461 (50,152)	-3,753 (4,444)	3,831 (13,434)			
<b>DRONE_STRIKES</b>	21,054* (10,129)			3,575* (1,653)	5,206** (2,474)		5,783* (2,322)
<b>YEMEN_STRIKES</b>				15,069 (16,498)			
<b>DRONE_DEATHS_</b> <b>AVERAGE</b> <b>(MILITANTS)</b>		2,106* (,772)					
<b>YEMEN_DEATHS</b> <b>(MILITANTS)</b>		-42,385 (18,719)					
<b>DEFENSES_LAGGED</b>	102,798 (423,661)	-165,199 (198,089)	-59,765** (16,752)	272,196*** (54,814)	254,648** (75,403)	324,848** (89,903)	167,128* (71,487)
<b>TOTAL_POWS</b>					,005		



					(,011)		
<b>AFG_FOR_TROOPS</b>						,003 (,003)	
<b>IRAQ_US_TROOPS</b>						-,004* (,001)	
<b>R<sup>2</sup></b>	,863	,971	,756	,978	,975	,996	,989
<b>R<sup>2</sup> corr.</b>	,726	,912	,560	,955	,958	,988	,974

*Significance: \* <10 per cent level, \*\* <5 per cent level, \*\*\* <1 per cent level*

*OLS Regressions*

**Table 3** Results of statistical analysis (qualitative outcomes)

	i	ii	iii
VARIABLE	DEATHS_WORLD	DEATHS_IN_ CORD-ATTACKS	DEATHS-PER- CORD-ATTACK
CONSTANT	9597,011** (3032,607)	4934,755*** (474,681)	17,270*** (2,814)
ARRESTS_TOTAL			
ARRESTS_WEST			
RENDITIONS	-108,789* (46,786)	-44,179*** (7,323)	-,123** (,043)
DECAPITIZATION			
DRONE_STRIKES	13,427 (29,803)	6,430 (4,665)	,001 (,028)
YEMEN_STRIKES			
DEFENSES_LAGGED	-633,627 (908,374)	-849,485*** (142,184)	-2,840** (,843)
TOTAL_POWS	,172 (,131)	,035 (,020)	7,275E-005 (,000)
AFG_FOR_TROOPS			
IRAQ_US_TROOPS			
<i>R</i> <sup>2</sup>	,735	,915	,833
<i>R</i> <sup>2</sup> corr.	,558	,858	,721

Significance: \* <10 per cent level, \*\* <5 per cent level, \*\*\* <1 per cent level

OLS Regressions

**Table 4** Final check: regression including core findings and alternate arrests data

	i	ii	iii
VARIABLE	ATTACKS_WORLD_ TOTAL	ATTACKS_WORLD_ TOTAL	ATTACKS_WORLD_ TOTAL
CONSTANT	2893,453*** (366,618)	1732,416 (1183,653)	2622,016*** (370,196)
RENDITIONS	-42,678** (14,672)	-30,170 (18,973)	-60,033*** (16,925)
STRIKES_TOTAL	22,103*** (6,066)	19,459** (6,563)	20,555*** (5,573)
DEFENSES_LAGGED		252,512 (244,873)	
ARRESTS_KEY			185,209 (111,655)
<i>R</i> <sup>2</sup>	,841	,862	,886
<i>R</i> <sup>2</sup> corr.	,801	,803	,837

*Significance: \* <10 per cent level, \*\* <5 per cent level, \*\*\* <1 per cent level*

*OLS Regressions*

## DISCUSSION OF FINDINGS

There are numerous challenges inherent in studying counter-terrorism effectiveness. In this study these are addressed by taking a broad and aggregated approach, but these means that the finding cannot be as precise as in studies with less methodological hurdles. However, while we cannot report the exact influence of each independent variable on a given dependent variable, by running numerous models with varying specifications we can be confident in how a given variable influences terrorist activity, i.e. the direction and broad magnitude. Bringing together these individual observations we can then draw out larger observations about the war on, or policing of, terrorism.

### War-fighting Kill Approach

The strongest finding regarding the war-fighting approach is that drone strikes have a large positive and significant effect on the total number of attacks worldwide: more drones strikes lead to an increased number of attacks. This was true of drone strikes in Pakistan (in two

models) and even more so for total strikes. However, strikes in Yemen alone are not significant, likely due to their smaller number and Al Qaeda in the Arabian Peninsula's (AQAP) unique history and organizational position.<sup>70</sup> Drone strikes (Pakistan) also have a high positive and statistically significant effect on the number of attacks by jihadi groups worldwide. This result remained the same in two models tested that use different independent variables for the capture aspect and thus seems robust. Drone strikes (Pakistan) also have a positive and significant effect on the number of attacks in warzones in five different models tested. Two Poisson models confirmed this positive effect in another robustness check. These findings are further supported by the fact that the number of militant deaths (Pakistan) in drone strikes is also positive and significant for total attacks worldwide and for attacks in warzones.

These findings indicate the existence of a backlash effect in the face of what is perceived to be an unjust and unbalanced counter-terrorism tactic. The effect of deaths by drones is not as large as the simple number of strikes, indicating the backlash is more against the exemplary tactic than personal vengeance (something we find consistent with the decapitation findings discussed below). This means that killing is ineffective in this case and thus that we should reject Hypothesis H1. Moreover, the finding lends to support to Hypothesis H1A, i.e. that killing is actually counter-productive. However, drone strikes are insignificant for deaths in coordinated attacks, deaths-per-coordinated attack, and deaths worldwide. This implies drone strikes have no effect on the organizational capabilities of terrorist groups. Strikes do not, rather logically, somehow improve organizational effectiveness, but neither do they degrade organizational effectiveness. Nonetheless, the effect remains positive (i.e. attack quality increases) and given the sensitivity of significance levels to the variables included in the model further exploration of this aspect would be beneficial.

In one model tested troop numbers were significant (at nearly the 1 per cent level) for Iraq, but insignificant for Afghanistan. In Iraq this effect was negative – indicating effectiveness – but was quite small. Methodologically, troop levels was hard to fit into the regressions

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<sup>70</sup> On AQAP see Farrall, "Some thoughts on the printer plot and AQAP" and Leah Farrall, "Can we stop the hysteria about AQAP please?" (*The blog formerly known as All Things Counter Terrorism*, 1 August 2010. Available at: <http://allthingscounterterrorism.com/2010/01/08/can-we-stop-the-hysteria-about-aqap-please/> [Accessed 08.01.2014].

without introducing biases, but, for what it is worth, the negative and tiny effect was relatively robust in these models. We believe the small effect as well as the problem with this variable is due to variations over time. As mentioned earlier, a surge in troop levels increases the number of targets on the ground for terrorists, thus in the short-term we would expect an increase in the number of attacks. But over time these attack numbers would decline as the increased troop numbers successfully combated the terrorists or drove them underground or to countries with a less intensive counter-terrorism pace. A glance on the, albeit sketchy and somewhat unreliable, monthly statistics, seems to indicate such a troop-attack surge followed by attack decline. Thus this variable lends some, albeit weak, support to H1 that killing is effective, if it is wide-net killing, but exactly how effective, for whom it is effective, and when it becomes effective is debatable. At the least though, troop surges do not seem counter-productive; thus we can tentatively reject H1A for this aspect.

Decapitation did not approach near significant levels when tested for influence on the total number of attacks worldwide, total jihadi attacks worldwide, and attacks in the West. The effect (both positive and negative) also varies along unexplainable lines. It thus does not help reject or support the alternative hypotheses, but does imply the tactic is not effective. However, this variable is – as said above – highly subject to variation based on definitions. Thus we do not claim this tactic is always ineffective, but that fine-tuned and specific (e.g. country or campaign) studies would be most appropriate for examining decapitation.

### **Policing Capture Approach**

The most significant tactic within the policing approach is renditions, which has a quite large negative effect on attacks worldwide. This misses out (but not always by much) on being statistically significant in three models tested which include defenses as one of the variables, but in two further models focusing on capturing variables and drone strikes they are significant (at the 5 per cent and 1 per cent levels). The negative effect remains, but at a lower level, for worldwide jihadi attacks, but the insignificance returns, in several models tested. The same is true for attacks in the West. However these both also include defenses in the analysis. While this does not enable us to reject or accept H1 or H1A, the consistent negative effect is noteworthy and implies this may be an effective tactic if the specification (or – in practical terms – the situation) is right.

And indeed renditions do have a significant and large negative effect on the number of attacks in warzones across six models (one at less than 10 per cent, four at 5 percent, and one at 1 per cent).<sup>71</sup> This significance of rendition was confirmed in two Poisson models, including one which used rendition regimes as an alternative specification. This makes sense given renditions in their nature imply primarily targets in non-western states, out of which the suspects are extracted. This also helps explain the above complication when defenses, these being in the West, and renditions are considered together. Thus capturing seems effective if capturing also means “disappearing” a suspect from their area of main operations. This is consistent with the backlash hypothesis’ conditions, one of which requires that the trigger be known to the public and visible.<sup>72</sup>

Renditions also have a significant (at almost the 5 per cent level) large negative effect on total deaths in attacks worldwide. Given renditions should (we hope) only target high-value individuals, this makes sense: the renditions are reducing organizational effectiveness, leading to less deadly attacks but having a less clear effect on the pace of attacks outside warzones. Renditions also have a large negative and highly significant (at less than 1 per cent) effect on number of deaths in coordinated attacks and this significance and effect remains, though at a slight lower level, for deaths-per-coordinated attack. When considered together we believe that overall these findings support hypothesis H2, that capturing is effective, but with qualification that this capturing implies disappearing a person (rendition) and that the effect is more qualitative globally while quantitative only in front-line GWOT zones.

The necessity of this condition of “disappearing” is reinforced by the fact that arrests in the West are far from significant for total number of attacks worldwide and total jihadi attacks worldwide. Total worldwide arrests however do attain significance at less than 5 percent for number of attacks worldwide and attacks in the West, but the impact is quite small and, interestingly, positive. In one model for attacks in warzones total arrests again attains significance (5 per cent level), but again with a very small positive effect. In other models this slight positive effect of arrests on attack numbers against various target sets seems consistent, and several of these barely miss out on statistical significance. Arrests of key persons are also

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<sup>71</sup> Only in one model does renditions fall below the 10% significance level, but just barely (.107).

<sup>72</sup> Francisco, “Coercion and Protest”; Francisco, “The Relationship between Coercion and Protest”; Hafez and Hatfield, “Do Targeted Assassinations Work?” p. 364.

not significant for world attack totals (but close) for attacks in warzones, though the direction is still positive.

Thus drawing a conclusion on arrests is difficult. It may be the variable is too aggregated; other scholars have found arresting people of different levels, character, etc. has different effects.<sup>73</sup> However, when we consider this aggregate mostly includes “foot soldiers” (assuming the organizations are not overly top-heavy) the consistency of the positive affect is worrying. We consider this as lending light support to hypothesis H2A: that capturing is counter-productive. This lends support to the theory lower level “terrorists” are caught-radicalized-and-released, whereupon they become more serious threats. Arrests of key leading terrorists, on the other hand, may lead to a backlash and more attacks globally, but the evidence is weak and therefore we consider both H2 and H2A as not supported in the case of key leaders; their arrests seems not to matter either way.

Lastly, the number of POWs has a very small positive (i.e. more attacks) effect on the total number of jihadi attacks worldwide, but this is not significant. The same holds for deaths in coordinated attacks and per-coordinated attack (more or less) as well as for deaths worldwide. Regarding attacks in warzones, where we would expect capturing POWs to have the most effect, the insignificance holds for all but one model, and here too the effect is positive. The consistency of the positive effect, even if small and not significant, is consistent with the findings of the arrest variable and lends support to hypothesis H2A on the counter-productive nature of arrests, specifically for lower-level persons. Our Poisson model had a similar result in that this variable “matters”, but was less useful in revealing in which direction it matters.

### **Defensive Approach**

Possibly the most interesting findings comes when we switch from our offensive focus to looking at the defensive side of counter-terrorism, which like capturing in more of a policing approach and, moreover, is more traditional than some of the above policing tactics. We first found that defenses have a very large positive affect on the number of jihadi attacks worldwide in three models, with one significant at almost the 5 percent level but the other two just missing out on significance. Thus, counter-intuitively, defenses seem to increase attack

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<sup>73</sup> Jordan, “When Heads Roll”; Moghadam, “How Al Qaeda Innovates”; Hafez and Hatfield, “Do Targeted Assassinations Work?” p. 363.

numbers. The positive effect remains for two of three models on total world attacks but is not significant. We believe this is due to the soon to be discussed redirection effect being tied only to the areas in the Middle East.

To explore this unusual finding we looked next at the total number of attacks conducted in the West. We now found that defenses have a large negative effect with significance at almost the 1 per cent level, i.e. the defenses were making the West safer. Defenses also have a shocking large negative effect on deaths in coordinated attacks, and at .001 significance level. While this could be partially driven by 9/11, we should not ignore that there have been concrete cases of large-scale events foiled by defenses since 9/11; 50 or more according to several American claims.<sup>74</sup> This negative and significant effect retains its influence for the deaths-per-coordinated attack, though at more normal levels, but it is still highly significant. Even in other models where defenses lose significance (e.g. death worldwide) the sign and magnitude remain the same.

To explain why on a global level the effect is positive despite the negative effects in the West we need to look at the effect of defenses on total attacks in our specified war zones, recalling our defense variable is only for average defense levels in specified Western states. For attacks in war zones we again see a huge positive affect at a high significance levels across six models.

Thus we can conclude that hypothesis H3 holds only for select states and conditions. Defenses make the West safer and also overall make it harder to conduct sophisticated multi-prong attacks, with some indication quality of attacks in general may decline. While this is good, unfortunately H3A is also supported by this finding and – while not a mutually exclusive alternative to H3 – sort of trumps it on normative grounds. It seems defenses lead to a shift in the target set, redirecting terrorists to other more vulnerable target sets even if these are of lower value (to the West and most jihadi terrorists; not normatively), what game theorists call target transference and here on a strategic scale. The West thus may be exporting its terrorist problem to other states, where other persons' lives pay for the security of western citizens.

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<sup>74</sup> Peter Bergen, David Sterman, Emily Schneider, and Bailey Cahall. 2014. *Do NSA's Bulk Surveillance Programs Stop Terrorists?* (Washington, D.C.: New America Foundation, 2014). Available from: [http://www.newamerica.net/publications/policy/do\\_nsas\\_bulk\\_surveillance\\_programs\\_stop\\_terrorists](http://www.newamerica.net/publications/policy/do_nsas_bulk_surveillance_programs_stop_terrorists) [accessed 6 January 2015], p. 1.



## CONCLUSION

The primary findings indicate that both killing and capturing have specific aspects of them which have large effects – specifically, drone strikes, which seem counter-productive for counter-terrorism, and renditions, which seem effective. Thus, on balance and simplifying, policing, albeit a harsh expansion of the traditional form, is the better approach. But this needs to be qualified. While renditions and their focus on high-value persons seems effective, there are some indications mass arrests, including of POWs, may be counter-productive. The reverse is true for killing. Drone strikes (like renditions) focus on high-value persons, but their effect is positive (more attacks), but the general troop numbers, which is a more wide-net strategy targeting many persons (like arrests and POWs) have a negative effect over the long run and thus may be effective. To sum the policy implications then: for an effective counter-terrorism strategy kill the foot-soldiers, disappear the leaders; do not engage in mass arrests or kill or arrest leaders in a public way. This reinforces the aforementioned scholars who find that the specific targets/suspects really do matter.

However, these effects of offensive tactics were dwarfed by the effect of increased defenses, which – positively – reduce attacks in the West in quantity and quality while – tragically – redirecting these attacks to other areas in the world, especially the frontline wars of the GWOT. Tactical deterrence and (area) denial through traditional but somewhat enhanced policing thus is an effective policy, but it is less clear if it would be effective if terrorists did not have substitution options. It is not clear whether this policy of re-direction, of creating honey-pots that attract terrorists to targets of less value to the state engaging in the counter-terrorism policies, is purposive, but game theory and examples from history indicate it is possible.

As the wars in Iraq and Afghanistan wind down it will be interesting to see what new trends in transnational terrorism emerge, especially with the additional formal end of rendition as a policy (and even covertly it is likely used less extensively now). These two policies were, as noted above, the more effective counter-terrorism strategies. Meanwhile drone strikes, which evidence here indicates are counter-productive, continue unabated. Lastly, following the revelation of and backlash against the extent of the domestic intelligence gathering in the West (especially the US), the effectiveness of the re-direction of terrorism from the West

through defenses may also warrant reexamination in the coming years, though Syria has become a new honey-pot for international jihadists.

This study conducted a theoretically rooted empirical examination using aggregate data to examine the strategic, global level during a specific era of terrorism. We believe this was a useful and necessary step before further studies lower the level of analysis, put efforts into disaggregating data to a finer scale, or focus on specific campaigns or countries in the GWOT. The findings here can help direct these studies and have provided clear and interesting avenues for future research that can falsify or confirm our broad findings. Despite the difficulties in data collection and in measuring effectiveness as a policy outcome, the issue of counter-terrorism is of such importance that this should not prevent us from attempting research on this topic.<sup>75</sup> Even one or two findings, with even small impacts/effects statistically speaking, can aggregate when put into real-world practice and lead to lives saved as well as increase the general security and trust in our socio-economic and political system and ideas.

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<sup>75</sup> Following from Gary King, Robert Keohane, and Sidney Verba, *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton, NJ: Princeton University Press, 1994), p. 6.