Forecasting Terrorism: The Need for a More Systematic Approach

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Abstract

This article analyzes a unique branch of terrorism literature—terrorism futures—by academics, think tanks, and governmental agencies published between 2000 and 2012. To this end, it examines over sixty publications that attempt to discern possible futures of terrorism. In general, the track record of forecasting terrorism has not been good. This is particularly true for major changes in the modus operandi of terrorism, the attacks on 9/11 being a case in point. The analyses of the future of terrorism shows an absence of methodologies, and the lack of theoretical foundations, which lead to limited insights about the causes of changes in terrorism. Most forecasts seem to say more about the present state of terrorism than about the future. The article concludes with a call for a more systematic approach grounded in theory and methodology in order to improve the quality of foresight studies, and to enable researchers to better understand how to assess, model, forecast, and respond to the future terrorist threat.

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Introduction

Terrorism is a complex and ever-changing phenomenon. Nonetheless, predictions on future developments in terrorism are both fairly common and have greatly increased in the wake of the 9/11 terrorist attacks in the United States. The track record of forecasting terrorism, however, has not been good, and this is particularly true for major changes in the *modus operandi* of terrorism. According to Czwarno, "[academia] failed to pre-

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dict or warn government policymakers and the public of the possibility that events with the magnitude of 9/11 could take place on the United States homeland."[1] She argues that methodological and conceptual problems both within and between academic disciplines created a gap in the knowledge about Islamic terrorism and groups like al-Qaida. In fact, the rise of al-Qaida caught most of the academic community by surprise on 9/11. The same can also be said for the U.S. intelligence community. Although the *9/11 Commission Report* speaks of "a shock, not a surprise," there were apparent analytical failures on the part of those who were supposed to keep the United States safe from terrorism. This report focused on operational failures—opportunities that were not or could not be exploited by the organizations and systems of that time. However, in the chapter "Foresight and Hindsight" the commission argues that the failure of imagination was the most important missed opportunity.[2]

Literature Review

This article provides a review of publications on the future of terrorism by academics, think tanks, and governmental agencies over the past ten years. It examines the need for and limitations of future security foresight studies and seeks to answer the question whether or not we know substantially more about developments in terrorism today than in 2001. Many authors believe that improvements have been made in the study of terrorism, but what about our skills and efforts to improve foresight of terrorist threats? What have been the results of academia, think tanks, and government agencies in the field of forecasting after 9/11, and where do we stand today? Do we have the methodology, experts, and tools to forecast terrorism and implement counterterrorism strategies in 2020?

To answer these questions, this article examines over sixty publications that have attempted to predict or forecast terrorism over the last decade. The first part describes the methodology employed when selecting the literature and the scope and limitations of the study. The second discusses all of the literature reviewed and provides an overview of broad trends and patterns that were more or less common to the publications. The final section reflects on the findings and formulates recommendations for future research.

Methodology, Scope, and Limitations

The first step of this review was to collect publications that look into the future of terrorism.[3] In this case "publications" means books, articles, and reports from academia, governments, think-tanks, and non-

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governmental organizations (NGOs). The study covers only articles and reports written in English and published between 2000 and 2012. This timeframe was chosen because it covers the entire post 9/11 period as well as reports that were issued just before this game-changing terrorist attack. Articles focusing on past trends, (the methodology of) threat assessments, pre-incident indicators, academic theoretical reflections, or very short articles and op-eds were not included in this review.

Different methods were used to find the relevant books, articles, and reports. Open data sources were searched using combined key words such as "terrorism," "future," "forecast," "2020" or "outlook." In addition, widely recognized (digital) libraries and portals that focus on terrorism were explored, such as the MIPT Lawson Library and the Human Security Gateway. For the academic articles, three leading journals were consulted: *Terrorism and Political Violence*, *Studies in Conflict and Terrorism*, and *Critical Studies on Terrorism*. In these three journals, simple searches were conducted using combinations of the keywords and the timeframe described above.[4] The results were sorted by relevancy, which made it possible to explore the hundred most relevant results from each search. It should be noted that there are other journals that have occasionally published articles that focus on the future of terrorism.[5] However, articles published in the three leading journals in the field were deemed the most significant.

Regarding the complete collection of future foresights on terrorism, an analytical distinction was made between academia, think tanks, non-governmental organizations, and governmental agencies. The background of the authors of the articles, reports and other publications on the future of terrorism were examined, including nationality, age, sex, and affiliation(s). Second, the rationale behind the article or report was analyzed, as well as the methodology and the focus in terms of content or time frame.

This study acknowledges the limitations of its scope. By reviewing literature only in English and using a limited number of specific search terms, some potentially important and relevant articles will have been excluded. However, it aimed to include the most pertinent and up to date articles. And in reviewing some sixty documents, it is one of the most comprehensive literature reviews of the subject to date.

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Observed Patterns and Trends

Background

First, a clear majority of the main authors, about fifty, are either citizens of the United States or are U.S.-based. Out of the seven books reviewed, for instance, the majority were written or edited by male authors from the United States and the same was true for the journal article authors. Out of the NGO and think-tank reports, eight publications were written by institutions based in the United States, including the *Centre for American Progress*, *Foreign Policy Magazine*, *The Heritage Foundation*, and the *RAND Centre for Terrorism Risk Management Policy*. Furthermore, most of the government reports were mainly from the United States. These governmental actors include, among others, the *Future of Terrorism Task Force of the Homeland Security Advisory Council*, the National Intelligence Council, and the Congressional Research Service. This is followed by a much smaller group of half a dozen authors from the United Kingdom. The rest consists of persons and organizations from several Western-European countries, Australia, New Zealand, or Israel. Only a few persons and organizations represented in the literature review are based in other parts of the world: Asia, Africa or South America. In terms of gender, it seems that studying the future of terrorism is dominated by males; of all authors and consultants, more than eighty percent were male. Many of them also have held long careers in the field of counterterrorism.

Rationale

Most scholarly publications argue that the studies were undertaken to contribute to the academic understanding of trends in and possible futures of terrorism and for the purpose of knowledge generation—rather than to the benefit of (strategic) policymaking. Some authors, however, also highlighted the importance of the generated knowledge to inform strategic policy. Ackerman writes, "in order to determine the correct level of official response, it is necessary to examine the potential for radical environmentalist groups to engage in various levels of violence against humans."[6] Of the NGO and think tank reports, in five cases, the purpose for writing was not described.[7] In three reports, the main purpose was reported, again, to be knowledge generation.[8] In four reports, a link between the generated knowledge and strategic policy was established.[9] As can be expected from governmental reports, all eight reports were written to present, inform, or reflect on strategic policy.

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Methodology

Strikingly, for most of the studies, many conclusions indicate that the methodology used to produce the foresights on terrorism is at least vague or not explicit at all. Furthermore, most publications, do not provide a time frame to which their findings apply. The methodologies that are presented range from empirical or ethnographic methods,[10] model construction,[11] and reflections by expert groups,[12] to literature reviews and the use of scenarios and rankings.[13] In some cases these approaches are unsystematic and many seem to lack a theoretical foundation. Two exceptions to this trend are found in the articles of Czwarno and Monaghan and Shirlow,[14, 15] who extensively describe their methodology and the related pros and cons. In addition, many authors make reference to their data sources, although not all of them describe how the data was analyzed.[16] A variety of methods were used, ranging from analyzing statistics,[17] examining case studies,[18] reviewing literature,[19] to reflecting on professional experiences.[20] The report from the *Institute of Homeland Security Solutions* should also be mentioned separately, as it specifically describes how quantitative techniques were used to characterize qualitative case studies of terrorist incidents.

In summary, much of the literature lacked concrete methodologies. According to Lia, the terrorism futures literature has generally suffered from the lack of systematic thinking about how changing societal conditions can produce a variety of both permissive and inhibiting environments for terrorism, resulting in constantly evolving patterns of terrorism. He also points at the fact that articles and reports are often based on observation of related events and extrapolations from single cases. Consequently, the evolving contextual or underlying factors shaping the very environments in which terrorism thrives or declines are not properly analyzed or understood.[21] Lia's own study is the exception in the terrorism futures literature as he provides a conceptual framework for predicting future patterns of terrorism as well as a critical roadmap towards understanding terrorism strategically and is probably the best guide available to date.

General Focus

Many of the terrorism forecasts predominantly address one particular type of terrorism or the potential use of one particular weapon. Of the almost sixty publications evaluated, about forty focus on al-Qaida or its affiliates and associates. Additionally, lone-wolf terrorism is often addressed in the more recent publications (2010–2012). This phenomenon is partly described as a type of terrorism and partly as a tactic or

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modus operandi. Regarding the use of weapons, there is a strong focus on the use of chemical, biological, radiological, or nuclear (CBRN) weapons; more than 25 studies specifically look at this possibility. There is increasing attention on cyber terrorism and terrorist use of the Internet, including a number of publications that were issued before the worldwide exponential growth of the Internet. When categorizing the literature, it was helpful to separate the articles into their type of publication, as this tended to influence the focus. For instance, government reports were more narrowly focused than that of the books. Below is an overview of the various subject matter of all of the reviewed publications.

Books

The topics and focus of the seven books reviewed varied. First, it should be noted that none of the books focused on one single terrorist group. General reflections on the present and future of terrorism were common and were found in five books.[22] In most cases, the contextualization was historical. In their outlooks on terrorism, these authors related changing global and geopolitical conditions to changing terrorism in the future. In all books, authors discussed issues related to the *modus operandi* of terrorist organizations. Possible targets of terrorist attacks, such as energy or food supplies, were discussed in three books.[23] Possible tactics, such as the use of cyber-terrorism or CBRN weapons were discussed in four books.[24] Finally, counterterrorism strategies were discussed in three books.[25] None of the authors was clear about the timeframe when making predictions about the future of terrorism.

Journal articles

In general, the authors of articles in *Terrorism and Political Violence* have applied one or two focal points. The first one concerns the making of predictions about the possible future threat coming from a specific terrorist group or from a specific terrorist tactic, such as cyber-terrorism. This is done by three authors. Ackerman discusses the potential threat of the Earth Liberation Front and other radical environmental groups.[26] Post *et al*. and Gressang focus on the threat coming from terrorists using cyber-terrorism or weapons of mass destruction respectively.[27] A second type of focus, seen in four articles, reflects on societal, political, and/or academic predictions of terrorism. Koblentz reflects on predictions of CBRN terrorism.[28] Taylor and Horgan and Beit-Hallahmi reflect on the predictions made about the threat coming from environmental and religious groups respectively.[29] Silke's article is more abstract and focuses on the validity, credibility and reliability of research-based predictions about terrorism in general.[30] Among those who made predictions on threats coming from

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specific groups or tactics, no author defined the period that their prediction applied to. However, out of those that reflected on predictions of terrorist threats, several authors did cover a specific time frame, such as 1995–2000, mid 1990s–2011 or 1964–2002.[31]

The authors of articles in the journal *Studies in Conflict and Terrorism* mainly made forecasts about the potential threat of a certain types of terrorism. These include the threat of particular groups: al-Qaida,[32] female terrorists,[33] Sikh separatist terrorists,[34] loyalist paramilitary groups in Northern Ireland,[35] or recidivist jihadists.[36] Other authors focus on the potential threat of particular tactics, ranging from arson induced forest fires as a weapon of mass destruction,[37] to the threat of 9/11 becoming a model for future terrorism.[38] Three authors specifically focus on existing terrorism forecasts. These include reflections on the failure to predict 9/11,[39] their own previous predictions of terrorism as a professional,[40] and reflections on predictions made in the last twenty years.[41]

Think tanks, NGOs, and governmental reports

In terms of topics covered in NGO and think tank reports, most reports discussed different terrorist organizations, their tactics and general trends. Different topics were discussed that dealt with possible future trends or threats from specific terrorist groups. The majority of the publications do not define a time frame for their future forecasts. In only three publications was such a definition made: the World Economic Forum focuses on short term terrorism trends,[42] the RAND Center for Terrorism Risk Management Policy makes forecasts up to the year 2020,[43] and the Center for Strategic and International Studies up to 2025.[44] The relationship between changing patterns in terrorism and broader societal changes—such as demographics, globalization, power shifts, technological innovations, and changing perceptions of identity—is stressed in four reports.[45] Finally, counterterrorism strategies are discussed in four other reports.[46] These reports conclude that there were missed opportunities to prevent terrorist attacks. Of the seven government reports reviewed, most focus on strategic policy.[47] One report looks into forecasting only. This report by the Homeland Security Advisory Council discusses a whole range of global trends, including terrorism.[48]

General Findings

Most of the reviewed publications and reports contained rather vague and imprecise predictions with the exception of two very obvious conclusions shared by almost all authors: 1) terrorism will continue to exist in the

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future, and 2) terrorism is not a static but a changing phenomenon that is likely to change in the future. Almost all studies seem to expect terrorism to remain at the same level or believe it to increase or become more lethal. Interestingly, the National Intelligence Council cautiously mentions that terrorism's appeal could diminish by 2025, predicated on continuous economic growth and increased youth employment.[49]

In terms of threat analysis, different conclusions were made about which group(s) pose a threat or what parts of the world should be considered potential hot beds of terrorism. Menelik points to the likeliness of European home-grown jihadists attacking the United States,[50] while Phares sees the threat mainly coming from South America and the Middle East.[51] There is agreement, however, on the continuation of the jihadist threat to the West. In addition to jihadist organizations, domestic paramilitary groups,[52] other home-grown groups,[53] and hybrid organizations such as Hizbollah are also mentioned as important future threats.[54]

In terms of *modus operandi*, some authors stress the likelihood of terrorist use of CBRN weapons in the future.[55] Possible innovations in terrorist tactics and weapons are discussed in six out of seven government reports. They surmise that the tactics likely to be used in the future are: weapons of mass destruction,[56] CBRN weapons, Internet or cyber terrorism,[57] simultaneous attacks,[58] and suicide attacks.[59] Four out of seven government reports argue that decentralization of terrorist organizations is likely to lead to the emergence of dispersed sets of groups, cells, and individuals who are loosely organized and self-supportive.[60] Two reports explicitly forecast that decentralization will lead to individualization or lone wolf terrorism.[61] Possible future targets of terrorist attacks specifically mentioned are the oil and energy sector.[62] Pearlstein stresses the vulnerability of the agricultural sector, and the likelihood of terrorists attacking a nation's food supply.[63]

Authors that analyzed terrorism and made forecasts seem to share the conclusion that current research is of low quality. Silke even compares it with fast-food, "quick, cheap, ready-to-hand and nutritionally dubious."[64] Koblentz writes about heuristics and systemic errors.[65] Taylor advocates careful analysis of differences and intersections of terrorist subgroups before making forecasts about the whole group together.[66]

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Conclusions

The overall conclusion regarding the terrorism forecasts published between 2000 and 2012 is that there is no general consensus on the future of terrorism, and that there is a lot of room for improvement in the methodology and research. The literature by academia, think tanks, NGOs, and governmental agencies is composed of very different types of publications, with different intentions and purposes, as well as different focal points. This raises the question to what extent these studies actually contribute to more insights on what is to be expected of terrorism in the future. Moreover, the vagueness or absence of methodologies and the lack of theoretical foundations also leads to limited insights about the causes of changes in terrorism. Most forecasts seem to say more about the present state of terrorism and terrorism research than about the future. In most cases, current threats and latest incidents dominate terrorism foresights. This should not necessarily be considered negatively as, in general, tomorrow looks very much like today and today is very similar to yesterday. But what about the day after tomorrow? Unfortunately, from time to time, terrorists manage to surprise us and strike us where we least expect it or in ways we could hardly imagine. Therefore, it does not suffice to expect future terrorism to be more or less the same as today. If we want to avoid unpleasant surprises, we cannot permit another "failure of imagination" as some argue was the case with 9/11. We need to be able to look beyond today or at least have some idea of what the future might bring.

It is questionable whether the last ten years have seen an improvement in the quality of terrorism foresight studies. Of course, many of the approximately sixty publications investigated provide valuable insights about possible developments in terrorism. But they do not provide systematic tools nor go much beyond vaguely formulated conditions that may have an aggravating effect on the threat of terrorism. Moreover, it should be noted that most of the authors of the foresights are experienced, but relatively older, Western, male experts who deal with counterterrorism on a daily basis. Perhaps this particular group of experts is over-focused on terrorism and are consequently not the most suited "to think outside the box" and approach this phenomenon in innovative ways, conceptualizing it differently and in a way that they had never thought of before. We possibly need the involvement of a fresh pair of eyes. One could think of a younger, more international, and gender-balanced group of persons, including non-experts on terrorism, to look into the future of terrorism. All in all, it is safe to say that there are still many obstacles and limitations to the extremely difficult exercise of

discerning trend paths and possible and probable futures of terrorism. That said, improvements can be made so that "our guesses about the future do not have to be pure speculations."[67]

Recommendations

In light of the shortcomings of the terrorism foresight literature mentioned in this article, the following three recommendations could lead to improvements in forecasting terrorism. First, the study of the future of terrorism needs more systematic thinking about how changing societal conditions can produce a variety of both permissive and inhibiting environments for terrorism, and how this results in evolving patterns of terrorism. To this end, more analysis is required on the contextual or underlying factors that shape these environments in which terrorism either thrives or declines.[68] The latter option is rarely included in terrorism forecasts as they seem to be preoccupied with possible developments in a negative direction.

Second, the group of people that look into the future of terrorism needs to be expanded. Noticing the strong over-representation of U.S.-based, relatively older and experienced male experts, one could argue that the potential failure of imagination as noted by the *National Commission on Terrorist Attacks Upon the United States* is still relevant. Without denying the incredible experience and intellect of the older generation of experts, it would be interesting to invite young and non-expert persons to look at possible futures of terrorism. In addition, it would be wise to select a more international group of people, including citizens or residents from non-Western countries, to participate in systematic research about the future of terrorism. This especially makes sense in consideration of the fact that most terrorist activities take place outside the West. In addition, reviews like this present article should not solely focus on English-language literature on the future of terrorism in English, but look into publications in other languages as well.

Finally, as argued by Joshua Sinai and others, we need to utilize the latest and innovative conceptual methodologies and software-based systems that are grounded in the social and behavioral sciences if we want to stay ahead of the terrorist threat.[69] He argues that there is a lot to gain from theoretically grounded, conceptually precise, methodologically rigorous, and analytically oriented research that can help us to fully understand the underlying conditions that give rise to terrorism.[70] In sum, a more systematic approach by a more mixed group of experts and scholars, in combination with new software systems, might enable researchers to better

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understand how to assess, model, forecast and respond to the future terrorist threat of 2020.

About the Author

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