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The Structural "Root" Causes of Non-Suicide Terrorism: A Systematic Scoping Review

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This article proposes a systematic scoping review of the structural "root" causes of non-suicide terrorism. It aims to synthesize the knowledge produced on this very specific issue from 2000 and 2009 and to raise questions about unanswered issues and those that deserve more in-depth investigation. After presenting our methodology, we offer an overview of this subfield of research. We then discuss our main results and explain why no substantive argument on the structural "root" causes of terrorism emerges. We argue that the main gaps lie in the high fragmentation of this subfield, definitional problems, a somehow flexible operationalization of concepts, and a high dependence on sources of questionable reliability.

Keywords scoping review, structural root causes, terrorism

It has become commonplace to say that the field of terrorism studies has undergone tremendous changes since 2001. Although the field is still facing major definitional, methodological, and theoretical challenges,[1] progress has unquestionably been made in understanding this complex phenomenon. However, while interest in terrorism studies has been constantly growing, little is known about the type of knowledge produced within the field. It is striking to note "the relative absence of any reflective state-of-the-art reviews of what the field has achieved."[2] This may be explained by many factors, such as the lack of a consensual definition, grand theories, or interdisciplinary dialogue. Another explanation certainly lies in the huge number of new publications printed each year, not to say each month, since 2001.

We assert that, although the field of terrorism studies remains largely unstructured and in a sense immature, literature reviews are much needed to better understand the main trends in the field, as well as the erring ways, the dead angles, and the un- or under-explored issues. Two edited volumes—the first by Andrew Silke,[3] and the second by Magnus Ranstorp,[4]—have paved the way, followed by book chapters or articles on more specific issues.[5] The recent emergence of a new trend, the so-called critical studies on terrorism, has led to the increase in the number of

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literature reviews, but they remain relatively marginal compared with other fields of research.[6]

This article introduces a method rarely used in political science: a systematic scoping review. This method is best suited to synthesize the knowledge produced in a field of research. Considering the huge number of publications on terrorism, we decided to concentrate our review on the specific subfield of the structural "root" causes of non-suicide terrorism and to focus on peer-reviewed articles published between 2000 and 2009. In so doing, our objectives are twofold: first, to synthesize the knowledge produced on this very specific issue; second, to raise questions about unanswered issues and those that deserve more in-depth investigation. This article does not intend to draw revolutionary conclusions on causal factors that provoke or favor the emergence of terrorism. Rather, it develops an epistemological perspective and offers new insights into the production of knowledge within the field of terrorism studies. It is organized as follows: the first part outlines the main characteristics of a scoping review and explains our methodology, as well as the limits of the study; the second part examines the main characteristics of this subfield; the third part presents our results; and the fourth part discusses recurrent problems within the subfield. The conclusion highlights the shortcomings as well as possible avenues for research.

Main Characteristics of a Scoping Review

We chose to conduct a systematic scoping review to synthesize knowledge on the "root" causes of terrorism. Even if this method is rarely employed in political science, it is largely used by health and knowledge transfer researchers and is spreading to other fields of research.[7] The reason for this expansion is straightforward: the development of information-sharing technologies and the centralization of data in computerized databases allow researchers to collect a large number of studies coming from a wide range of disciplines and geographic locations in a matter of minutes. Moreover, systematic reviews offer numerous advantages compared with a traditional narrative literature review: a) they are more exhaustive; b) they are more transparent; and c) since they follow a clear methodological template, they are replicable. There are numerous approaches to systematic review: full systematic review, meta-analysis, scoping review, etc. While these various approaches "share certain essential characteristics,"[8] they all have different objectives and follow different patterns. We opted for a scoping review, because it is the first step to undertake before undergoing a more comprehensive systematic review, like a full systematic review (including or not a meta-analysis of quantitative studies). Furthermore, a systematic scoping review focuses on the research findings themselves, and not on the methodologies. It is then best suited to the preliminary mapping out of a field or subfield of research.

Methods

Retrieval of Articles and Inclusion Criteria

In October 2009, we launched multiple keywords "chunks"[9] in the title, abstract, and keywords fields of twelve social science electronic bibliography databases and imported all the articles dealing with the "root" causes of terrorism into an Endnote

library. "Root" causes of terrorism are loosely defined here as the factors underlying the emergence of terrorist groups or that are conducive to terrorism.

We first eliminated the duplicate articles and those that were written in a language other than English. Since we wanted to be sure that we did not miss any relevant articles during the initial database screening, in December 2009, we manually searched through six journals specializing in terrorism and international relations that we identified as the main journals in which articles on the "root" causes have been published.[10] The new references published in these journals between 2000 and 2009 were imported into our database. At this point, we had a total of 4,962 references. Two reviewers then screened the title and the abstract of each article to select those that met our five inclusion criteria.

The inclusion/exclusion criteria were defined according to the main objectives of the research. Some criteria were refined during the initial steps of the process based on our increasing familiarity with the material. The inclusion criteria read as follows:

1. The subject of the article had to relate to the causes or the emergence of terrorism (regardless of the dependent variable used to measure the phenomena). Given that we wanted to isolate the causes of terrorism from other forms of violence, we had to be able to specifically measure the influence of independent variables on the emergence of terrorism. For example, some articles used the emergence of terrorism as an indicator to assess larger phenomena, e.g., the outbreak of political violence.[11] If we were unable to isolate the influence of the independent variables on the emergence of terrorism from other forms of violence, we rejected the article. Another point deserves notice: we did not include articles that had a dependent variable related to the popular support of terrorism or terrorist groups. Even if the authors said that they used popular support as a proxy to measure the emergence of terrorism, we contended that a major gap exists between supporting terrorism, joining a terrorist group, and carrying out a terrorist act.

   From another perspective, we decided to exclude articles dealing exclusively with suicide terrorism. This choice is certainly more questionable. The main reasons are twofold. First, suicide-terrorism is often viewed in the literature as a particular type of terrorist tactic that involves "complicated and contingent social, psychological, and political interactions."[12] Second, although the same causal factors may affect both "ordinary" and suicide terrorism,[13] we argue that literature on suicide terrorism today constitutes a specific subfield within the field of terrorism studies, and, as such, deserves a scoping review of its own. We also excluded all articles on state terrorism,[14] because we postulate, following Stohl and Lopez and Feldman and Perala, that non-state terrorism and state terrorism follow two different logics.[15]
2. The research had to include at least one of the following eleven independent variables: political freedom; civil liberties; democracy; dictatorship; state repression; country's economic development; country's socioeconomic conditions; national economic inequality; national level of education; individual's socioeconomic condition; and/or individual's level of education. Independent variables were identified in an incremental manner. As we became more familiar with our material, we included the independent variables that emerged most often in our sample. It certainly would have been interesting to synthesize all the articles regardless of their independent variables. In other words, we could have selected all the

articles that concerned the "root" causes of terrorism heedless of the nature of the cause (be it defined as political, psychological, cultural, etc.). But, due to taking into account resources and the weight of our initial Endnote database, we decided to narrow down our focus to one aspect, namely the structural "root" causes of non-suicide terrorism, which are strongly related to the eleven independent variables previously defined. This research strategy was defined to ensure the feasibility of this research. On one hand, we acknowledge the limitations of our approach. In particular, it led us to exclude all the articles dealing solely with the non-structural determinants of terrorism from our final sample. This was especially the case in psychological studies that analyze the influence of mental dispositions to understand why some individuals resort to this violent strategy. On the other hand, this research strategy still meets the main aims of a scoping review: presenting the main findings of a field or subfield of research, without introducing any restrictions on the dependent variables or any consideration as to the methods used.

3. The data of the dependent and independent variables had to be based on empirical evidence: interviews; fieldwork; content analysis of biographies and communiqués; surveys and databases that are used to collect evidence from reports, investigation, and open sources like ITERATE and the World Development Indicators of the World Bank. As a result, non-empirical essays and articles that were exclusively based on literature review were excluded.
4. The journal in which the articles appeared had to be peer-reviewed.[16] Our first idea was to include all empirical studies that met the other inclusion criteria regardless of their publication type. However, faced with the colossal database that we uncovered, we chose to concentrate our efforts on peer-reviewed journals and excluded books, book chapters, theses, essays, reports, online non-peer-reviewed working papers, and unpublished works. This decision was also motivated by the fact that articles published in peer-reviewed journals have undergone a formal review process.
5. Finally, the article had to be published between 2000 and 2009. We decided to concentrate on the research produced during what Robert Pape defines as the "second wave" in the study of terrorism.[17] The "classical authors" of the first wave unquestionably laid solid foundations to the research on the "root" causes. In general, this literature distinguishes between psychological factors, structural conditions, and the instrumental use of terrorism (rational choice theories). Important works include the 1981 article of Martha Crenshaw, in which the author proposes to integrate the situational variables, the strategies and goals of terrorist organizations, and the individual motivations;[18] Johnston's book which offers a typology of terrorism's main causes;[19] and Gross's work that proposes one of the first models on the causes of terrorism.[20] On a more general stance, numerous case studies address the root causes. But more often than not, these works only present a list of the causes of terrorism in a particular context without explaining how they interact or which ones may be considered the most important.[21]

While the psychological causes and the rational choice explanations were given priority, the structural causes have been under-addressed in the first wave of studies on terrorism. Moreover, as underlined by Ross, when they have been considered, they have "rarely been integrated into a comprehensive causal model."[22] There were of course noticeable exceptions. For instance, Hopple, Ross, and Vogly develop

tentative causal models on the structural factors that explain the emergence of terrorism.[23] Authors also focus on specific causes of terrorism. Gurr's model of relative deprivation has been, according to Schmid and Longman, one of the most frequently used in the 1970s and the 1980s to study the economic causes of terrorism.[24] By the same token, Schmid was the first to offer a theoretical framework on the relationships between certain attributes of democratic regimes and terrorism, empirically tested in an article by Eubank and Weinberg.[25] Nevertheless, beyond these attempts to systematically study the structural root causes of terrorism, the research remains very fragmented and only a few authors propose a model and systematically test it empirically. Besides, till the mid-1980s, research was primary published in book format. Given the few articles that met our four other criteria, we decided to concentrate on the "second wave" in the study of terrorism. This choice seems to us all the more relevant since authors have been more and more interested in the structural causes of terrorism since the end of the 1990s. Moreover, they explore new methodologies to address this issue. In particular, the access to systematic data compiled in large databases paves the way to using quantitative methods.

Process of Inclusion/Exclusion and Data Extraction

The articles that did not respect these inclusion criteria were removed from the database. To ensure that the inclusion/exclusion process was done in a replicable way, both reviewers separately screened the first 50 articles. The results were then compared and any disagreements were discussed. We repeated the exercise until we obtained 95% of concordance between the reviewers. In total, 250 articles were reviewed by both reviewers. At this point, each reviewer took a set of articles and worked on his own.[26] When we had trouble judging at first glance whether an article met all our criteria[27]—for example, for those that did not have any abstract or whose abstracts did not clearly show any empirical foundations—we read the full article to determine whether it met our inclusion criteria.

All in all, 183 articles were read to determine their inclusion/exclusion. From this first sorting, 48 articles were included in our study. We then selected all the references included in the bibliography of these articles and screened their abstracts to see whether the ones that were not included in our initial EndNote library met our inclusion criteria. If so, we included them in our study. We repeated this step with all new included articles until we found no more articles to be added to our database. At this point, we had 63 articles in our study and were quite confident that we had exhausted the field of research (a list is provided in the Appendix).

With the inclusion/exclusion step done, we proceeded to data extraction. We used a reading grid[28] to assure that all data were systematically extracted by both reviewers. The first two articles were separately done by both reviewers. The results were compared and disagreements were discussed. We repeated this exercise until we eliminated any sort of discordance. In total, ten articles were extracted by both reviewers. At this point, each reviewer took a set of articles and worked on his own, but regular meetings were organized to sort any problems out. Once the data were extracted, we compiled them using a simple statistical method and analyzed them. Before turning to our results, we present the main characteristics of the structure "root" causes subfield.

The Structural "Root" Causes of Terrorism Subfield

Analyzing the structural "root" causes of the terrorism subfield, as it currently stands, provides a general overview of the framework in which knowledge is produced and diffused. What follows is a series of observations and thoughts that give insight into the journals in which peer-reviewed articles based on empirical studies are published, the main authors working on this topic, the timeframe of these studies, the regions covered, and the methods employed.

It can be argued that the structural "root" causes, and, more largely, the problem of causation,[29] have become quite a popular issue among researchers. As shown in Table 2, there has been an increase in the number of articles published between 2000 and 2009: 73% ($n = 46$) of the 63 articles have been published between 2006 and 2009.

A parallel can be drawn between this deep interest and the debates about "the prevention" of terrorism within the U.S. and international and regional organizations (the United Nations since October 2001; European Union and Council of Europe, among others).[30] Since 2001 and the revival of attention to international terrorism within these different forums, the emphasis has been put on measures to prevent terrorism. Poor socio-economic conditions, lack of civil and political liberties, and discrimination based on ethnicity or religion have been identified as conditions conducive to terrorism.[31] The obvious influence of the political agenda on research should not come as a surprise for those engaged in the field of terrorism studies. On the contrary, it reflects a more general feature of research on terrorism, which is more often than not "event-driven" and "policy-driven,"[32] not to mention policy-oriented.[33] As such, the subfield of "root" causes is no exception to this rule.

Our second observation is related to the relative fragmentation of the structural "root" causes subfield. The two dedicated scholarly journals—*Terrorism and Political Violence* and *Studies in Conflict and Terrorism*—bring together a good deal of these articles, that is, 38% ($n = 24$) of the 63 articles scoped. The other articles were published in journals that principally focus on economics, 27% ($n = 17$);[34] in journals that specialize in security topics, 13% ($n = 8$);[35] in political science journals, 13% ($n = 8$);[36] and in international relations journals, 10% ($n = 6$).[37] Once again, this trend is not specific to the "root" causes subfield and characterizes the whole field of terrorism studies. This may be explained by its slow maturation and a very fragmented intellectual structure. Although the two "core" journals seem well established, students of terrorism tend to naturally turn to disciplinary journals. Compartmentalization is the rule, and the multi-disciplinary nature of the field has not yet led to much-needed interdisciplinary dialog.

This relative fragmentation makes the scoping review all the more relevant since it covers journals regardless of the discipline they belong to (27 different journals in our case) and makes knowledge accumulation less difficult. It also enables us to identify the regular authors publishing on this topic. One cannot but notice that the structural "root" causes subfield well illustrates another core characteristic of the field of terrorism studies: most authors are "transient."[38] Only five authors of our sample authored or co-authored more than one peer-reviewed article: James A. Piazza (6), Carlos Pastena Barros (5), Edward Newman (2), Christopher Hewitt (2), and Quan Li (2). The case of J. A. Piazza deserves special notice since he has published six peer-reviewed articles on this topic, which represents almost 10% of the set of articles we scoped. Two reasons may explain this result: the differences in publication strategies from one author to another;[39] and the fact that we only took

Table 1. Electronic bibliography databases screened and keywords

Web of Science	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR TS = ((Terrorism* OR Terrorist*) SAME (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR TS = ((Terrorism* OR Terrorist*) AND TI = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
PAIS	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR KW = ((Terrorism* OR Terrorist*) within 5 (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (DE = (terrorism) AND KW = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
Worldwide Political Science Abstracts	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR KW = ((Terrorism* OR Terrorist*) within 5 (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (DE = (terrorism) AND TI = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
Sociological Abstracts	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR KW = ((Terrorism* OR Terrorist*) within 5 (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (DE = (terrorism) AND KW = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
EconLit	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR KW = ((Terrorism* OR Terrorist*) within 5 (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (DE = (terrorism) AND KW = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
Francis	TI = ((Terrorism* OR Terrorist*) AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR KW = ((Terrorism* OR Terrorist*) within 5 (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (DE = (terrorism) AND KW = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))

(*Continued*)

Table 1. Continued

International Political Science Abstracts	(TI (Terrorism* OR Terrorist*) AND TI (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (AB (Terroris* N5 cause*) OR AB (Terroris* N5 determinant*) OR AB (Terroris* N5 factor) OR AB (Terroris* N5 factors) OR AB (Terroris* N5 correlat*) OR AB (terroris* N5 causal*) OR AB (terrori* N5 root) OR AB (terroris* N5 root)) OR (SU (Terrorism* OR Terrorist*) AND TI (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
Social Sciences Full Text	((terrorism* OR terrorist*) in ti AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots) in ti) OR ((terrorism* OR terrorist*) <near/5> (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots) in ab) OR ((terrorism* OR terrorist*) in de AND (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots) in ab) AND Limited to Peer Reviewed
Academic Search Premier	(TI (Terrorism* OR Terrorist*) AND TI (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (AB (Terroris* N5 cause*) OR AB (Terroris* N5 determinant*) OR AB (Terroris* N5 factor) OR AB (Terroris* N5 factors) OR AB (Terroris* N5 correlat*) OR AB (terroris* N5 causal*) OR AB (terrori* N5 root) OR AB (terroris* N5 root)) OR (SU (Terrorism* OR Terrorist*) AND TI (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))
Embase	(terrorism*:ti OR terrorist*:ti AND (cause*:ti OR determinant*:ti OR factor:ti OR factors:ti OR correlat*:ti OR causal8:ti OR root:ti OR roots:ti)) OR ((cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots) near5 terroris*:ab) OR ('terrorism'/exp AND (cause*:ab OR determinant*:ab OR factor:ab OR factors:ab OR correlat*:ab OR causal*:ab OR root:ab OR roots:ab))
PubMed	(((Terrorism*[TIAB] OR Terrorist*[TIAB]) AND (cause*[TIAB] OR determinant*[TIAB] OR factor[TIAB] OR factors[TIAB] OR correlat*[TIAB] OR causal*[TIAB] OR root[TIAB] OR roots[TIAB])) OR (Terrorism[MAJR] AND (cause*[TI] OR determinant*[TI] OR factor[TI] OR factors[TI] OR correlat*[TI] OR causal*[TI] OR root[TI] OR roots[TI]))) Not Medline[SB]
Psycinfo	(title = (terrorism* OR terrorist*) AND title = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (title = (terrorism* OR terrorist*) AND abstract = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots)) OR (it = terrorism AND title = (cause* OR determinant* OR factor OR factors OR correlat* OR causal* OR root OR roots))

Table 2. Number of articles published between 2000 and 2009

Year	No.
2000	2
2001	3
2002	1
2003	3
2004	8
2005	1
2006	15
2007	11
2008	12
2009	7

into consideration articles published in peer-reviewed journals. Although we cannot control for the first factor, we acknowledge that our initial choice may somewhat distort our results. However, this possible bias does not put into question the general trend that we have been observing since we launched this research. On the contrary, the quasi-absence of regular authors on this topic further illustrates the lack of commitment of researchers already pointed out by Andrew Silke and Avishag Gordon.[40] It also poses a critical problem of continuity, which makes any efforts to synthesize the findings of research on the structural causes of terrorism difficult.

Another feature of the subfield is the net dominance of researchers affiliated with American or Western European universities. Out of the 104 authors[41] who wrote the articles in our sample (main author or co-author), 88% ($n = 91$) are located in this part of the world, and 49% ($n = 51$) in the United States alone. This may not come as a surprise given the field of terrorism studies historically grew up in Western Europe and in the U.S.[42] Although researchers coming from other parts of the world have begun to become interested in terrorism studies, they remain relatively marginal in the field. Moreover, issues on "root" causes seem to remain mainly a North American and Western European concern.

A majority of authors have chosen quantitative methods (cross-sectional, time series, time-series-cross-sectional, etc.) to address the issues of structural "root" causes: in the 63 articles, quantitative methodologies were used 48 times[43] and qualitative methodologies 25 times, namely surveys, interviews, content analysis, etc.[44] The "root" causes subfield may be considered here to be a sort of exception, since it is dominated by quantitative methods, while most terrorism studies rely on qualitative analysis of secondary sources.[45] Although descriptive statistics account for the majority of the analysis, inferential statistics are used more and more, producing refined results. This represents a noticeable development. The availability of terrorist incidents databases,[46] subsidized mainly by research centers, think tanks, and state agencies located in the U.S., provide functional data, even if the kind of data collected raise questions that will be addressed later in this paper. Data on socio-economic and political factors compiled by international organizations like the World Bank or by research centers open new perspectives. Accordingly, the cost for entry into the structural "root" causes subfield is certainly lower than in other terrorism studies subfields, due to the accessibility of data for those who want to engage in quantitative analysis.

These types of data have a strong imprint on the timeframe and the regions studied. In general, articles based on quantitative methods incorporate a large number of countries, when the region under study has been specified, which is not always the case. This makes it difficult to draw a general picture. Nevertheless, about 29% (n = 18) of the articles that deal with a specific region concentrate on the Greater Middle East, loosely defined as a region including Israel, the Palestinian Territories, Jordan, Syria, Lebanon, Iraq, and Iran, but also countries from the Arabian Peninsula, Turkey, Pakistan, and North Africa. Europe (excluding Russia) is the second zone of interest 10% ($n = 6$), followed by North America 5% ($n = 3$) and China 3% ($n = 2$) (with new interest in the Uyghur uprisings). By the same token, the timeframe of the articles under study depends on the methods employed and on the data collected. Most quantitative studies cover large periods (for instance, 1978–2002),[47] while qualitative studies focus generally on a narrower period of time.

These series of observations give us insight into the framework and context in which knowledge on the "root" causes is produced. The next section focuses more precisely on the structural factors that play a role in the emergence of terrorism or terrorist groups.

The Problematic Nature of the Results[48]

During the extraction process, we isolated four different dependent variables: a) number of terrorist attacks in one country; b) terrorist attacks coming from outside (attacks committed by a group "born" or based outside the country targeted); c) number of terrorist groups in one country; and d) structural factors explaining individual participation in terrorist groups. This strategy covers the different levels of analysis at which the structural causes of terrorism are measured: the individual level, the collective level, and the national level. In addition, we chose to compile the results for every single dependent variable measured. For instance, Nesser analyzed the motivational factors at the group level and the individual motivations to integrate a terrorist group into the Spanish and Dutch contexts.[49] We thus counted four different dependent variables and compiled each dependent variable independently. By the same token, many articles ran more than one test. We followed the same logic and compiled each test separately.

The extraction process of independent variables proved to be far more challenging than we initially thought. First of all, we extracted all the independent variables used by the authors to explain the emergence of terrorism. All in all, we found 91 different independent variables through our whole corpus. Including all these variables would have been methodological nonsense since the great majority only appear once. Moreover, the objective of this article remains to offer a synthesis of the most recurring structural factors that favor the emergence of terrorism or terrorist groups. We thus focused our attention on the 11 independent variables that were used as inclusion criteria, which were selected following the process described below.

We were facing a major difficulty when it came to compiling the results since there was no consensus on the operationalization of these independent variables. On many occasions, we had trouble dissociating variables from concepts. For example, indicators for civil liberties and political rights were sometimes used to measure the level of democracy[50] or state repression.[51] In these cases, we took the author's stance and matched the indicators based on the operational definition that the author had adopted. This meant that, for some articles, we merged the indicators

for civil liberties and levels of democracy, because the author created a composite index stating that this was the best way to evaluate the democratic nature of a regime. We did the same, when applicable, for the "political rights" and "state repression" indicators. For the sake of clarity, we also included the indicator of "political rights" in the larger category of "political freedom," and merged the indicators for "civil rights" and "civil liberties." This operation was even more subjective in the case of qualitative studies taking an interpretive approach, given variables were not always defined in a systematic way. We acknowledged the part played by interpretation, and the somewhat artificial nature of this aggregation process and the limits it entails.

As the four different tables show, it is quite difficult to draw a consistent picture since few solid results emerge. Rather they demonstrate, despite the number of articles published on this topic between 2000 and 2009, the absence of any consensus regarding the structural "root" factors that cause terrorism. In other words, no causal model emerges. Let us take four different examples that best exemplify, in our point of view, the inconsistencies illustrated in the tables. The independent variable "democracy"—one of the most measured—remains also one of the most controversial. Does democracy prevent or promote terrorism? While answers to these fundamental questions remain blurred by methodological issues that will be addressed later on, findings suggest some ambiguous outcomes. First, the relationship is uncertain when we consider the structural determinants of individual participation in a terrorist group. It is negative when counting the number of terrorist groups that appear in one given country. Tables 4 and 5 seem to show that democracies are more prone to terrorist attacks committed by domestic and international groups. However, it is worth noting that the paucity of our data hindered our ability to draw any significant conclusions. This is especially true in Table 4 since the small number of results are distributed nearly equally between the positive and negative relationships.

Due to the great uncertainty of the results and persistent disagreements on the nature of this relationship, it would be risky to draw definitive conclusions. For example, Weinberg maintains that "international terrorism and democratic performance had little to do with one another."[52] Piazza, questioning the relationship between democracy and terrorism in the context of 19 Middle Eastern countries, shows variations from one model to another. It emerges that, in models that examined international terrorist attacks only, specifically where the perpetrator and the target or victim are of different national origins, democracy is a positive predictor of terrorism. The same result is found when the dependent variable is sorted by country among Middle Eastern states. But, when omitting the Palestinian/Israeli case, the tests bring about less consistent results, even if the relationship remains positive.[53] For their part, Drakos and Gofas conclude that "the level of democracy is not directly related to terrorist activity."[54] Finally, Li proposes more refined results that distinguished between the effects of democratic participation, institutional constraints, and electoral system on terrorism. Beyond the variation from one model to the next, he concludes that "democratic participation reduces transnational terrorism," but "that the institutional constraints over government play a fundamental role in shaping the positive relationship between democracy and transnational terrorism."[55]

State repression remains, as pointed out by Piazza, "an enigma."[56] We cannot but admit that results paint no clear picture. While Table 4 shows that the state

Table 3. Terrorist attacks committed in a given country

Structural factors associated with terrorist attack in one country						
Independent variables	Positive	Negative	Null	Uncertain	Non-linear	Total number of tests
Political freedom	4	1	5	0	1	11
Civil liberties	1	3	5	2	0	11
Democracy	12	0	6	5	1	24
Dictatorship	1	0	0	0	0	1
State repression	3	3	2	1	1	10
Country's economic development	7	5	9	5	0	26
Country's socioeconomic conditions	1	0	6	0	0	7
National economic inequality	0	0	6	2	0	8
National level of education	2	0	1	1	0	4
Individual's socioeconomic conditions	0	0	0	0	0	0
Individual's level of education	0	0	0	0	0	0

repression in one country reduces terrorist attacks instigated by terrorist groups born and active in another country, we cannot generalize this conclusion, since it is taken from only one test. The results presented in the other three tables are even more striking for different reasons. We found no article directly addressing the effects of state repression on the emergence of terrorist groups. Yet, studying this kind of relationship may tell us a lot about the type of violence mobilized by groups and individuals. On the contrary, the effects of state repression on an individual's decision to join or participate in a terrorist group could be described as somewhat significant, given 60% of the tests conducted showed a positive effect. In a study on the motivations of individuals who have joined the Colombian guerrilla movement since 1960, repression is cited by interviewees as an encouraging factor.[57] Nevertheless, we could argue that there is a tremendous difference between the determining factor of individual participation in a terrorist group and the (in)ability of this group to commit terrorist acts due to the repressive actions of the state in which it is operating. Finally, the measure of state repression offers uncertain results when considering the structural factors that favor a terrorist attack in one country (Table 3). Testas draws a clear positive relationship between low and high levels of repression in Muslim countries and terrorist attacks.[58] Freedman and Perala come to similar conclusions in an article dealing with the non-governmental terrorism in Latin America. They even assert that they discover "an empirical confirmation for

Table 4. Terrorist attacks coming from outside

Terrorist attacks coming from groups born in another country than the one under attack

Independent variables	Positive	Negative	Null	Uncertain	Non-linear	Total number of tests
Political freedom		1				1
Civil liberties		2	2	1		4
Democracy	4	3		1		8
Dictatorship						0
State repression		1				1
Country's economic development	1	1	2	2	1	7
Country's socioeconomic conditions	1	1				2
National economic inequality	1		1			2
National level of education			1			1
Individual's socioeconomic conditions						0
Individual's level of education						0

theoretical arguments linking non-governmental terrorism to the level of state repression and abuse."[59] But Dalacoura, among others, contradicts such clear-cut results. In her article on Islamist terrorism, she demonstrates that state repression may or may not have an effect on the number of international terrorist incidents.[60] Although this issue is particularly context-sensitive, it certainly deserves further investigation, which would allow us to better understand the nature of the influence of state repression on a group's strategies and individuals' motivations.

The analysis of the country's economic development (GDP per capita or GPD growth) gives very mixed results. Once again, they throw the researcher into much confusion because the relationship proves to be complex and strongly dependent on the way it is measured. Kurrild-Klitgaard, Justesen, and Klemmensen well illustrate the complexity of the relationship between terrorism and economy. When measuring for the number of terrorist attacks, the relationship is positive.[61] But when considering the country of origin of the terrorists, the relationship is null. Furthermore, as pointed out by Blomber, the relationships between terrorism and the economy are dependent on the regime type. It is said to be "important" for high income countries, but not for low income countries. Moreover, as the author puts it, periods of economic contraction create the conditions of instability in high income countries.[62]

Education is certainly one of the independent variables that gathers the most consensus. It is true that the relationship between education, whether defined at a

Table 5. Number of terrorist groups in a country

Number of terrorist groups/emergence of terrorist groups in a country						
Independent variables	Positive	Negative	Null	Uncertain	Non-linear	Total number of tests
Political freedom						0
Civil liberties						0
Democracy		1				1
Dictatorship						0
State repression						0
Country's economic development						0
Country's socioeconomic conditions			1			1
National economic inequality						0
National level of education	1					1
Individual's poverty						0
Individual's level of education						0

Table 6. Structural determinants of individual participation in terrorist groups

Structural factors explaining individual participation in terrorist groups						
Independent variables	Positive	Negative	Null	Uncertain	Non-linear	Total number of tests
Political freedom			1	1		2
Civil liberties			1	1		2
Democracy				1		1
Dictatorship						
State repression	3	1		1		5
Country's economic development						
Country's socioeconomic conditions	1			1		2
National economic inequality	1					1
National level of education						
Individual's poverty	1	5	1		1	8
Individual's level of education	5	1	1	1	1	9

country or an individual level, is mainly discussed when taking into consideration the structural determinants that favor individual participation in terrorist groups. While some disagreements persist, two relative consensuses emerge. First, authors generally agree on the role of educated people in terrorist organizations.[63] This assumption may be linked to another related issue: the relationship between poverty and individual involvement in terrorist organization is not supported. Some authors like Maleckova and Krueger and Berrebi link this conjecture to the high level of educated people in terrorist groups. Being more aware of social and political situations, these individuals develop a strong sense of social and political responsibility and may be motivated by the socio-economic conditions of their countrymen.[64] They adopt a "Robin Hood" behavior, espousing a cause and acting in the name of others. The relationship between poverty and individual involvement in terrorist organizations is thus largely dependent on the social background of many of the members in these groups. Secondly, they agree that the content of education is what matters, and not the level of education as such.[65] In Pakistan, for example, children being indoctrinated into Pakistani *madrassas* are more susceptible to integrate into a group resorting to terrorism than the children who followed their curriculum in secular schools.[66]

The Main Limitations and Difficulties

How can we explain the impossibility of reaching any consensus and draw a causal model that could be applied to better understand the phenomena of the structural "root" causes? What follows is a series of observations and thoughts that identify the main difficulties we encountered in the process of conducting this research. They also draw attention to the principal problems that stand out in this particular subfield, which also impinge on the field as a whole.

Problems of Definition

Not surprisingly, the impossibility of establishing a common definition of terrorism strongly influences any attempts to accumulate knowledge. While some quantitative studies generally rely on the definition adopted by the databases from which data is extracted (ITERATE or MIPT in most cases), a majority of authors ($n = 34$) do not give any details on the source of their working definition, when they have one. More often than not, the definition of the "term" terrorism is taken for granted, without further conceptual precaution. In eight different cases, authors adopted, without questioning it, one of the definitions of the U.S. governmental agencies (in this case, FBI, U.S. Department of State, U.S. Criminal Code). While several authors agree on the pointlessness of achieving a common definition, we argue that a minimal definition is much needed, given the high level of fragmentation in this subfield, but also the different levels of analysis at which authors conduct their investigation. The variation in the conceptualization of what constitutes the core concept of these articles acts as a strong limitation in the understanding of the studied phenomena. Since this problem has been extensively discussed, we will not expand on it.[67]

Operationalization of the Independent and Dependent Variables

As noted above, we did observe a great variation in the definition of both independent and dependent variables. Comparisons of and from different studies require

a clear definition of the key concepts. But there is a great disparity in the operationalization of both the dependent and independent variables, which poses major problems. This limitation appears to be a serious one, since it may lead to theoretical deadlock. Take, for example, the operationalization of the variable "democracy." The attributes given to the variable "democracy" vary from author to author, even if most used some aggregate indicators of political regime type. But, as pointed out by Li, these indicators cannot separate the positive and negative effects of democracy on the emergence of terrorist groups or terrorism.[68] In the same vein, some authors use "political freedom"' as an indicator of democracy,[69] while others make "political freedom" a variable on its own accord. This creates disparate results and considerably hinders our ability to compare results. We contend that the variance in our results is best explained by these differences in the operationalization of both the dependent and independent variables, since authors finally do not always measure the same phenomena.

Dependence on Sources and Data Quality

The discussion on the differences in the operationalization of both independent and dependent variables highlights the strong dependence on sources. This is particularly true for the quantitative studies that heavily rely on databases of terrorist incidents and on other databases, such as Polity IV, the World Bank, or OCDE indicators. Two major concerns could be expressed regarding the availability of information and its reliability. The former strongly impacts what is measured. For instance, the above-cited MIPT or ITERATE databases do not propose much data on terrorist incidents in dictatorial or authoritarian countries because the collection of data, carried out mainly through media screening, is neither easy to come by nor reliable. In these countries, the number of terrorist incidents is indeed minimized to hide the potential vulnerability of the state, or overstated to de-legitimate opponents to the state. As pointed out by several authors, this introduces a bias in the reporting of terrorist acts between different regimes.[70] The high dependence on the availability of sources makes it difficult to measure factors that may be relevant to the emergence of terrorists or terrorist groups. By the same token, measuring terrorism by counting terrorist incidents does not offer a whole picture. Such approaches take into consideration neither the variation in intensity of violence, nor the different types of terrorist groups, nor their evolution over time.

Moreover, the quality of these data has been frequently and justifiably questioned, since it is quite difficult to double-check the source, the collection process, and the handling of primary information. Data strongly imprint on the research on the structural "root" causes of terrorism. While the creation of databases still offers very interesting avenues for quantitative research, caution in using the data compiled is much needed. Qualitative research based on extensive fieldwork may partially redress these limitations, although it is very often too context-sensitive to offer a real potential for generalization. Not to mention that researchers who use this approach sometimes offer no formal definition of the concept under study, which hinders the leverage and the comparability of their results. In sum, while we acknowledge that data will never be "perfect," researchers must at the very least be aware and specify the limitations induced by the validity of the data they are using. As long as these conditions are not fulfilled, it would be extremely difficult to aggregate insight and knowledge on this topic.

Endogeneity Problems

Another problem is worth mentioning for it impacts the overall results if not taken into consideration in the design of the research. Problems of endogeneity may affect some key independent variables in quantitative studies. While some authors are very careful, others seem to simply ignore this issue, taking for granted a unique direction of causality. The problem of endogeneity particularly concerns issues related to state repression or political rights. In the case of state repression, the nature of the relationship between repression, terrorist attacks, or involvement in a terrorist group may be difficult to determine for certain as a state could rely more heavily on repression to counter or respond to a terrorist act.[71] In this type of configuration, state repression could no longer be considered a condition conducive to terrorism. The same applies to civil liberties, which may be restricted in a given country in response to terrorism.[72] Endogeneity may also distort the relationship between economic conditions and terrorism given the latter may have a negative impetus on the former.[73]

The Problematic Distinction Between Domestic and International Terrorism

In our sample, studies on transnational/international terrorism[74] predominate in number over studies on domestic terrorism. This is not surprising since data on international terrorism have been compiled in several databases while data on domestic terrorism remain very fragmented and less available.[75] Yet, as pointed out by Abadie, "the determinants of international terrorism are not necessarily informative about the determinants of domestic terrorism."[76] We should be cautious in considering not only the level of analysis (individual, collective, or national), but also the categories of terrorism under scope.

But while essential, this distinction is not the only one needed. A systematic distinction should be made between the factors that trigger off a terrorist attack and the nationality of the perpetrators, given the increasing degree of hybridization within terrorist groups and the interaction between the local and the global aspects. This may have important theoretical outcomes. For example, if the dependent variable is based on the number of terrorist attacks perpetrated in a country without consideration of the nationality of the perpetrator, an attack committed in a democratic country by a group based in an undemocratic country would suggest that democracy is the cause of terrorism. This distinction is all the more important that a terrorist incident could be committed in one given country in response to political developments in another country. The location of the terrorist act does not always equate with the place where the attack was decided and organized.[77] In this case, the general political environment of the country of origin of terrorist perpetrators should be considered first. The development of terrorist groups, especially those belonging to the Jihadi sphere, makes it more difficult to test the very "root" causes of terrorism since local and global elements interlink.[78]

Conclusion

This article presents insights into our (in)ability to measure the structural "root" causes of terrorism. While authors rigorously test demonstrable correlations upon strong theoretical premises, no substantive argument, let alone causal theories of

terrorism, emerges. If some studies have a significant impact upon the field, their conclusions more often than not contradict each other, bringing about much confusion and making impossible any prediction. As argued throughout the whole paper, this subfield of research still shows strong signs of immaturity. At this stage, it is not prone to cumulative knowledge for it is constructed from too different disciplinary perspectives. Furthermore, the wide array of methodology generates results that are difficult to compare. What would have reflected the wealth of this subfield should an interdisciplinary dialogue be conducted proves to represent a major obstacle in its structuring.

The gaps mainly lie in definitional problems, a somehow flexible operationalization of concepts, and a high dependence on sources of questionable reliability. The variety of data acts as an impediment to substantive progress since it creates different measures and leads to different findings. Moreover, one dimension seems to have been ignored by most authors: the factors that cause terrorism may vary according to the context. We contend that controlling for variables that make "noise" is, in our point of view, insufficient to draw a complete and consistent picture. The interaction among variables, including contextual ones, remains a blind spot in most quantitative studies. While case studies attempt to provide more in-depth analysis, sometimes taking into account this interactive dimension, they usually lack generalizing potential and sometimes use undefined concepts that make them hard to compare. Both qualitative comparative studies and studies that take a mixed approach remain an exception in the subfield of the structural "root" causes of terrorism, and are still marginal in the field of terrorism studies. Whereas disaggregating variables is much needed to avoid risky generalizations over time and across cases, and whereas terrorism is a changing phenomenon very sensitive to the social and the political background, tools to reintegrate the context into the analysis and its variations are still lacking. Along these lines, E. Newman proposed that systematically combining or correlating the "root" causes with the precipitant factors linked to a given context may open new avenues of research.[79]

While all these methodological limitations cast doubts about the explicative value of causal factors, we agree that the structural "root" causes of terrorism certainly are a legitimate scientific subject and have a scientific and social utility. But the treatment of this important issue deserves more flexibility, as well as a greater openness to other literatures, particularly the texts on civil wars or political violence in which very similar difficulties have already been extensively examined and discussed.[80] The next steps would include building bridges with other fields of study to give new dynamics to unresolved debates.

Notes

1. Andrew Silke, "The Devil You Know: Continuing Problems with Research on Terrorism," in Andrew Silke (ed.), *Research on Terrorism: Trends, Achievements and Failures* (London: Frank Cass, 2004), 57–71; Andrew Silke, "Contemporary Terrorism Research: Issues in Research," in Richard Jackson, Marie Breen Smyth, Jeroen Gunning (eds.), *Critical Studies on Terrorism: A New Research Agenda* (London, New York: Routledge, 2009), 34–48; Magnus Ranstorp, "Mapping Terrorism Studies After 9/11: An Academic Field of Old Problems and New Prospects," in Ibid., 13–33.

2. Magnus Ranstorp, "Introduction: Mapping Terrorism Research—Challenges and Priorities," in Magnus Ranstorp (ed.), *Mapping Terrorism Research: State of the Art, Gaps and Future Direction* (London, New York: Routledge, 2007), 3.

3. Silke, *Research on Terrorism* (see note 1 above).

4. Ranstorp (see note 2 above).

5. Richard Jackson, "Terrorism Studies and the Politics of Power," Paper prepared for International Studies Association (ISA) 47th Annual Convention, Chicago (28 Feb.–3 March 2007); Gary Ackerman, Anjali Bhattacharjee, Matthew Klag, and Jennifer Mitchell, *Literature Review of Existing Terrorist Behaviour Modeling*, Final Report to the Defense Threat Reduction Agency (Center of Non Proliferation Studies, 14 August 2002); Kim Knott, Alistair McFadyen, Seán McLoughlin, and Matthew Francis, *The Roots, Practices and Consequences of Terrorism: A Literature Review of Research in the Arts & Humanities*, Final Report for The Home Office, (Leeds: Department of Theological and Religious Studies, University of Leeds, October, 2006); Kevin L. Meyer, "Financial Markets and Terrorism: Critical Literature Review," Working Paper Series (St. Andrews: University of St. Andrews, 2010), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1578850; James T. Dunne, "Review article: Osama bin Laden: A survey of literature," *Studies in Conflict and Terrorism* 26, no. 2 (2003): 155–161.

6. Jackson et al. (see note 1 above); Joseba Zulaika and William A. Douglass, "The terrorist subject: Terrorism studies and the absent subjectivity," *Critical Studies on Terrorism* 1, no. 1 (2008): 27–36; Harmonie Toros, "Terrorists, scholars and ordinary people: Confronting terrorism studies with field experiences," *Critical Studies on Terrorism* 1, no. 2 (2008): 279–292; Richard Jackson, "The ghosts of state terror: Knowledge, politics and terrorism studies," *Critical Studies on Terrorism* 1, no. 3 (2008): 377–392; Teun van Dongen, "Mapping counterterrorism: A categorisation of policies and the promise of empirically based, systematic comparisons," *Critical Studies on Terrorism* 3, no. 2 (Aug. 2010), 227–241; Gordon Avishag, "Can terrorism become a scientific discipline? A diagnostic study," *Critical Studies on Terrorism* 3, no. 3 (December 2010), 437–458.

7. For example, there are numerous research organizations, which dedicate resources to the collection and dissemination of these approaches like Cochrane Collaboration, Joanna Briggs Institute, and the Center for Reviews and Dissemination.

8. Hilary Arksey and Lisa O'Malley, "Scoping studies: towards a methodological framework," *International Journal of Social Research Methodology* 8, no. 1 (Feb. 2005), 3.

9. See Table 1. The "chunks" of keywords was programmed by Mr. Stéphane Ratté, a research professional who specializes in screening electronic bibliography databases. We acknowledge his great contribution by launching the first step of this scoping review.

10. *Studies in Conflict and Terrorism; Terrorism and Political Violence; Defense & Peace Economics; Conflict Management and Peace Science; Journal of Conflict Resolution* and *Journal of Peace Research*.

11. See for example, Abraham H. Miller and Emily Schaen, "Democracy and the Black riots: Rethinking the meaning of political violence in democracy," *Terrorism and Political Violence* 12, no. 3 (Autumn 2000), 345–361.

12. Martha Crenshaw, "Explaining suicide terrorism: A review essay," *Security Studies* 16, no. 1 (Jan. 2007), 160.

13. Assaf Moghadam, "The Root Causes of Terrorism: A Multi-Causal Approach," in Amir Pedahzur (ed.), *Root Causes of Suicide Terrorism: The Globalization of Martyrdom* (New York: Routledge, 2006), 83.

14. Whether state terrorism is considered to be "state-sponsored" or "state-incited," following Charles Tilly's distinction. Charles Tilly, "State-incited violence, 1900–1999," *Political Power and Social Theory* 9 (1995): 161–225.

15. Michael Stohl and George López, *Terrible Beyond Endurance? The Foreign Policy of State Terrorism* (Westport, CT: Greenwood Press, 1988); Andreas E. Feldmann and Maiju Perälä, "Reassessing the causes of nongovernmental terrorism in Latin America," *Latin American Politics and Society* 46, no. 2 (Summer, 2004), 101–132.

16. We consulted the Internet page of each journal to determine whether a journal is peer-reviewed or not. When we had doubts, we confirmed the journal's status by consulting the PAIS website, which offers a reliable list of peer-reviewed academic journals (http://www.csa.com/factsheets/supplements/paispeer.php), last time consulted 10 November 2010.

17. Robert Pape, "Introduction: What is new about research on terrorism," *Security Studies* 18, no. 4 (2009), 644.

18. Martha Crenshaw, "The causes of terrorism," *Comparative Politics* 13, no. 4 (1981), 379–399.

19. Chalmers Johnson, *Revolutionary Change* (Stanford, CA: Stanford University Press, 1982).

20. Felix Gross, *Violence in Politics: Terror and Political Assassination in Eastern Europe and Russia* (The Hague: Mouton, 1972).

21. Jeffrey I. Ross, "Structural causes of oppositional political terrorism: Towards a causal model," *Journal of Peace Research* 30, no. 3 (1993), 319–320.

22. Jeffrey I. Ross, "Structural Causes" (see note 21 above), 317.

23. Gerald W. Hopple, "Transnational terrorism: Prospectus for a causal modeling approach," *Terrorism: An International Journal* 6, no. 1 (1982): 73–100; Jeffrey I. Ross, "Structural Causes" (see note 21 above); Thomas J. Volgy, Lawrence E. Imwalle, and Jeff J. Corntassel, "Structural determinants of international terrorism: The effects of hegemony and polarity on terrorist activity," *International Interactions* 23, no. 2 (1997): 207–231.

24. Alex Schmid and A. J. Longman, *Political Terrorism: A New Guide to Actors, Authors, Concepts, Data Bases, Theories, and Literature* (New Brunswick, NJ: Transaction Books, 1988), 62–68.

25. Alex P. Schmid, "Terrorism and Democracy," in Alex P. Schmid and Ron Crelinsten (eds.), *Western Responses to Terrorism* (London: Frank Cass, 1993), 14–25; William Eubank and Leonard Weinberg, "Does democracy encourage terrorism?," *Terrorism and Political Violence* 6, no. 4 (1994): 417–443.

26. When a reviewer expressed any doubts about the inclusion/exclusion of an article, a meeting was organized to discuss the uncertainties and to make a decision. We worked iteratively and repeated this step as often as necessary to be sure that all the articles included strictly met our criteria.

27. We found a notable difference between health and terrorism articles' abstracts. In health research, the majority of the abstracts are built on a uniform model, which clearly identifies the subject of the research, the methodology, and the conclusions. Thus, it is quite easy to judge at first glance if the article respects the inclusion/exclusion criteria. In the field of research on terrorism, this is not the case.

28. The reading grid included various pieces of information: the year of publication; the definition used in the study; the independent and dependent variables used to test the hypothesis; the source of the data; the methodology of the research; the conclusion of the study; the regions and the years under study; and so on.

29. Lee Jarvis, "The Spaces and Faces of Critical Terrorism Studies," *Security Dialogue* 40, no. 1 (2009): 6.

30. Karine Von Hippel, "Définir les origines du terrorisme: Un débat transatlantique?", *Revue Internationale et Stratégique*, no. 51 (2003) : 103–113. See the *United Nations Global Counter-Terrorism Strategy* that was adopted on 8 September 2006 and the annexed *Plan d'action* (especially point 5 of the section "Measures to address the conditions conductive to the spread of terrorism"), http://www.un.org/terrorism/strategy-counter-terrorism.shtml#poa1 (accessed 21 September 2010.).

31. Some aspects of this discourse could be connected to the larger agenda, "Millennium Goals for Development," developed within the UN. See the Millennium Development Goals Gateway: http://www.un.org/millenniumgoals/ (accessed 21 September 2010.).

32. Ranstorp, "Mapping Terrorism Studies After 9/11" (see note 2 above), 25.

33. Richard Jackson even speaks about a direct influence of the state on the field of terrorism studies, for they, "for the most part, adopted a state-centric priorities and perspectives on terrorism"—Richard Jackson, "Research for Counterterrorism: Terrorism Studies and the Reproduction of State Hegemony," Paper presented at the annual meeting of the International Studies Association 48th Annual Convention, Chicago (Feb. 28, 2007) http://www.allacademic.com/meta/p180773_index.html, 3.

34. *Defense and Peace Economics; Journal of Monetary Economics; The Journal of Economic Perspectives; American Economic Review; Economics Letters; The World Economy; European Journal of Political Economy; Public Choice; Peace Economics, Peace Science and Public Policy*.

35. *Conflict Management and Peace Science; Journal of Conflict Resolution; Journal of Peace Research*.

36. *Mobilization; The Journal of Politics; Latin American Politics and Society; Middle East Policy; Democratization; Social Forces; Policy Studies*.

37. *The Pacific Review; International Affairs; International Studies Quarterly; International Politics; Journal of Policy Modeling*.

38. As already shown by Andrew Silke, "The Devil You Know" (see note 1 above), 69.

39. For instance, Alan B. Krueger, co-author with Jitka Malecková of one of the most cited articles ("Education, Poverty and Terrorism: Is There a Causal Connection?," *Journal of Economic Perspectives* 17, no. 4 (2003): 119–144) has published in a wide range of publication types, while James A. Piazza seems to give priority to peer-reviewed journals. The main publications of Alan B. Krueger on the root causes of terrorism are: Alan B. Krueger, *What Makes a Terrorist* (Princeton, NJ: Princeton University Press, 2008); Alan B. Krueger and David Laitin, "Kto Kogo?: A Cross-Country Study of the Origins and Targets of Terrorism," in Philip Keefer and Norman Loayza (eds.), *Terrorism, Economic Development, and Political Openness* (Cambridge: Cambridge University Press, 2007). Alan B. Krueger, "What Makes a Homegrown Terrorist? Human Capital and Participation in Domestic Islamic Terrorist Groups in the U.S.A.," *Working Paper* 533 (Princeton University, Industrial Relations Section, September 2008) http://www.irs.princeton.edu/pubs/pdfs/533.pdf.

40. Avishag Gordon, "Transient and Continuant Authors in a Research Field: The Case of Terrorism," *Scientometrics* 72, no. 2 (2007): 214.

41. This number equals the sum of the names that appeared on each article. In other words, some authors who wrote more than one article were counted more than one time. Piazza for example published six articles and was thus counted six times.

42. For historical reasons, Israeli scholars have also developed a long tradition of research on terrorism. Nevertheless, the root causes issues don't seem to be a major issue of concern.

43. Articles that used mixed methodology (quantitative and qualitative) were counted twice: 1 in quantitative and 1 in qualitative.

44. Because qualitative methodologies fall behind and that fieldwork is not always easy to conduct, it seemed useful to list the different methods used by researchers: interviews with formers terrorists and family members; field observation; surveys and public opinion polls; terrorists' biographies, books, videos, websites, and manuscripts produced by terrorists groups; official documents, interrogations transcriptions, court documents and judicial summaries and proceeding; press articles; and media reports.

45. Silke (see note 1 above), 63–64 and 68.

46. On the terrorism databases, see Gary LaFree and Laura Dugan, "Introducing the Global Terrorism Database," *Terrorism and Political Violence* 19, no. 2 (2007): 181–204. Terrorism databases have undergone major restructurings since. The most important are today: a) *The Global Terrorism Database*, 1970–2007; b) the RAND *Database of Worldwide Terrorism Incidents* (RDWTI), 1972–2009; c) the *Worldwide Incidents Tracking System* (WITS), 2004–2010; d) *International Terrorism: Attributes of Terrorist Events* (ITERATE), 1968–2008.

47. Carlos Pestana Barros, Joao Ricardo Faria, and Luis A. Gil-Alana, "Terrorism against American citizens in Africa: Related to poverty?" *Journal of Policy Modeling* 30, no. 1 (2008): 55–69.

48. We are very grateful to the evaluator who suggested a change in title of this chapter and proposed a very appropriate title.

49. Petter Nesser, "Jihadism in Western Europe after the invasion of Iraq: Tracing motivational influences from the Iraq War on jihadist terrorism in Western Europe," *Studies in Conflict and Terrorism* 29, no. 4 (2006): 323–342.

50. Katerina Dalacoura, "Islamist Terrorism and the Middle East Democratic Deficit: Political Exclusion, Repression and the Causes of Extremism," *Democratization* 13, no. 3 (2006): 508–525.

51. James A. Piazza, "Rooted in poverty?: Terrorism, poor economic development and social cleavages," *Terrorism and Political Violence* 18, no. 1 (2006): 159–177.

52. Leonard B. Weinberg, William L. Eubank, and Elizabeth A. Francis, "The cost of terrorism: The relationship between international terrorism and democratic governance," *Terrorism and Political Violence* 20, no. 2 (2008): 257–270.

53. James A. Piazza, "Draining the swamp: Democracy promotion, state failure and terrorism in 19 Middle Eastern states," *Studies in Conflict and Terrorism* 30, no. 6 (2007): 521–539.

54. Konstantinos Drakos and Andreas Gofas, "In search of the average transnational terrorist attacks," *Defence and Peace Economics* 17, no. 2 (2006): 73–93.

55. Quan Li, "Does democracy promote or reduce transnational terrorist incidents?," *Journal of Conflict Resolution* 49, no. 2 (2005): 278–297.

56. James A. Piazza, "Rooted in Poverty?" (see note 51 above).

57. Mauricio Florez-Morris, "Joining guerrilla groups in Colombia: Individual motivations and processes for entering a violent organization," *Studies in Conflict and Terrorism* 30, no. 7 (2007): 615–634.

58. Abdelaziz Testas, "Determinants of terrorism in the Muslim World: An empirical cross-sectional analysis," *Terrorism and Political Violence* 16, no. 2 (2004): 253–273.

59. Feldmann and Maiju Perälä (see note 15 above).

60. Dalacoura (see note 50 above).

61. Peter Kurrild-Klitgaard, Mogens K. Justesen, Robert Klemmensen, "The political economy of freedom, democracy and transnational terrorism," *Public Choice* 128, no. 2, Special issue: *The Political Economy of Terrorism* (2006): 289–315.

62. Brock S. Blomberg, Gregory D. Hess, and Akila Weerapana, "Economic conditions and terrorism," *European Journal of Political Economy* 20, no. 2 (2004): 463–478.

63. Hegghammer finds that in Saudi Arabia, while his respondents (members of Al-Qaeda in the Arabic Peninsula) are well educated, the level of education and their background differ from other Islamist groups. Thomas Hegghammer, "Terrorist recruitment and radicalization in Saudi Arabia," *Middle East Policy* 13, no. 4 (2006): 39–60.

64. Claude Berrebi, "Evidence about the Link Between Education, Poverty and Terrorism among Palestinians," *Peace Economics, Peace Science and Public Policy* 13, no. 1 (2007): 1–36; Alan B. Krueger and Jitka Malečkova, "Education, poverty and terrorism: Is there a causal connection?," *The Journal of Economic Perspectives* 17, no. 4 (2003): 119–144.

65. Testas (see note 58 above); Krueger (see note 39 above); Berrebi (see note 64 above).

66. Christine Fair, "Who Are Pakistan's Militants and Their Families?" *Terrorism and Political Violence* 20, no. 1 (2008): 49–65.

67. See for instance Alex Peter Schmid and A. J. Jongman, *Political Terrorism: A New Guide to Actors, Authors, Concepts, Data Bases, Theories, and Literature* (New York: Transaction Publishers, 2nd edition, 2005).

68. Li (see note 55 above).

69. Feldmann and Perälä use the aggregate political and civil liberties indicator to measure or evaluate the nature of the political system. Feldmann and Perälä (see note 15 above).

70. Alex Schmid, "Terrorism and democracy," *Terrorism and Political Violence* 4, no. 4 (1992): 14–25; William Eubank and Leonard Weinberg, "Does democracy encourage terrorism?," *Terrorism and Political Violence* 6, no. 4 (1994): 417–443; Li Quan and Drew Schaub, "Economic Globalization and Transnational Terrorism: A Pooled Time-Series Analysis," *Journal of Conflict Resolution* 48, no. 2 (2004): 230–258.

71. James A. Piazza, "Rooted in Poverty?" (see note 51 above), 167.

72. Alberto Abadie, "Poverty, political freedom, and the roots of terrorism," *American Economic Review* 96, no. 2 (2006): 50–56.

73. Ignacio Sánchez-Cuenca, "Revolutionary dreams and terrorist violence in the developed world: Explaining country variation," *Journal of Peace Research* 49, no. 5 (2009): 687–706.

74. We don't intend to discuss the difference of definitions between the two concepts. As authors of our sample use both, we will refer later in the paper to international/transnational terrorism.

75. Sánchez-Cuenca (see note 73 above).

76. Abadie (see note 72 above).

77. Drakos and Gofas (see note 54 above).

78. Nesser (see note 49 above).

79. This idea is suggested by E. Newman, "Exploring the root causes of terrorism," S*tudies in Conflict and Terrorism* 29, no. 8 (006): 749–772.

80. See for example Nicholas Sambanis, "A review of recent advances and future direction in the quantitative literature on civil War," *Defence and Peace Economics* 13, no. 3 (2002): 215–243; Nicholas Sambanis, "Conceptual and Empirical Complexities of an Operational Definition," *Journal of Conflict Resolution* 48, no. 6 (2004): 814–858.

Appendix: List of the Articles, Published Between 2000 and 2009, Included in the Scoping Review

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