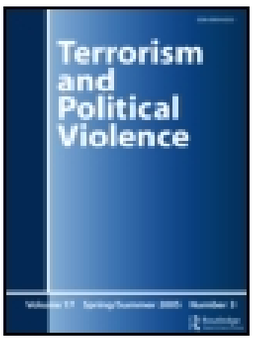

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How Did 9/11 Affect Terrorism Research? Examining Articles and Authors, 1970–2019

Brian J. Phillips [a,b]

[a]Department of Government, University of Essex, Wivenhoe Park, UK; [b]Department of International Studies, CIDE, Mexico City, Mexico

ABSTRACT

Terrorism research increased markedly after the attacks of Sept. 11, 2001 (9/11). How has research on this subject changed in the past 20 years? I examine data on more than 6,000 academic articles on terrorism between 1970 and 2019, and the more than 1,500 authors of multiple articles. This information comes from every article in the Web of Science database with "terrorism" or "terrorist" in the title. Several primary findings emerge. (1) The volume of terrorism research surged to record highs after 9/11, and has not decreased since. (2) Psychologists became the most numerous terrorism researchers after 9/11, displacing political scientists for about 10 years. Research on health or medical aspects of terrorism jumped after 9/11. (3) The proportion of female scholars increased substantially after 9/11, outpacing the rise in academia generally. This is in part because scholars new to the field were often from disciplines with relatively high percentages of women, such as psychology. (4) Terrorism scholars were mostly based in North America or Western Europe before 9/11, but the number of countries with scholars publishing terrorism research expanded considerably after 2001. Overall, terrorism research has developed in many ways over the decades, but 9/11 led to fundamental changes.

KEYWORDS

Terrorism; research; 9/11; gender; terrorism studies; journals; research on terrorism

The terrorist attacks of September 11, 2001, in the United States killed more people, and in many ways had more of a lasting impact, than any other single-day atrocity by non-state actors in modern history.[1] The attacks also had profound effects on terrorism research. It has been noted that the volume of research on the subject increased after the attacks (hereafter 9/11), but the precise extent of the increase has been unclear. More importantly, other consequences of 9/11 for terrorism scholarship are under-analyzed, but it seems likely that such a massive event, and the resulting surge in research, transformed the literature in numerous ways.

This manuscript seeks to address these issues by assembling two databases: one of articles on terrorism, and the other on the authors of these articles. The article database is the most expansive collection of articles on terrorism to date, covering 1970–2019. Unlike some other data collection efforts, this data set includes articles from all types of journals, and not only terrorism journals. Regarding authors, biographical information was gathered on the more than 1,500 scholars who have published at least two academic articles on terrorism. Methodological reasons require some analyses to be conducted on fewer years, but this are still the largest data sets of terrorism articles and authors studied.

At least four key patterns appear. First, the post-9/11 surge in research is both substantial and sustained. The number of articles classified as being on terrorism increased sevenfold between the decade before 9/11 and the decade after it. Terrorism research has not decreased since then. Second,

CONTACT Brian J. Phillips brian.phillips@essex.ac.uk Department of Government, University of Essex, Wivenhoe Park, Colchester CO4 CSQ, United Kingdom

psychologists overtook political scientists as the most prolific researchers of terrorism from 2002–2011. Third, the proportion of female scholars increased substantially after 9/11, outpacing the rise in academia generally. The seems to be at least in part because many scholars new to the field after 9/11 were from disciplines with relatively high percentages of women, notably psychology.[2] Finally, scholars based in the U.S. made up the majority of terrorism researchers for most of the sample, although their share decreased sharply starting in 2002 as scholars based in other countries started researching terrorism.

The next section briefly discusses previous research on trends in terrorism research. The third section introduces the data and describes how it was gathered. The fourth section discusses major trends in more detail. It focuses on to what extent terrorism research increased after 9/11, and how 9/11 has affected the set of scholars researching terrorism. The final section concludes with broader implications and suggestions for future research.

Terrorism research in context

A great deal has been written about terrorism research. There have been many literature reviews, for example summarizing the main debates in the field.[3] Most of the quantitative database-driven analyses of terrorism studies as a field have looked at research methodology, such as the relative rarity of primary sources and statistics, and co-authoring vs. solo work. Scholars have also explored which topics are studied. Regarding some of the most temporally expansive quantitative meta-studies, in roughly chronological order: Silke's path-breaking work analyzes multiple periods (1995–1999, 1990–2004, 1990–2007),[4] Reid and Chen study 1965–2003,[5] Lum and co-authors examine 1971–2003,[6] Chen analyzes 1990–2003,[7] Gordan studies 1965–2010,[8] and Schuurman examines 2007–2016.[9] Most of this work mentions that terrorism scholarship has increased since 9/11, and Silke's 2007 chapter is explicitly focused on how 9/11 has affected terrorism studies. Building on his previous research, Silke finds that collaborative research increased after 9/11, as did the use of statistics. He also documents that research on Al Qaeda and other Islamist terrorists increased dramatically after 9/11. Gordon notes some post-9/11 trends, for example that medical research on terrorism had increased in the 2000s.

This line of investigation has been fundamental to understanding issues in terrorism research, and helping to improve it. However, the extant research provides an incomplete picture of the potential effects of 9/11 on terrorism research, for at least two reasons. First, regarding the number of years analyzed, some of the meta-studies include both pre and post-9/11 years, but they were published fairly recently after the attacks. The relatively few post-9/11 years are insufficient to observe longer-term trends. A second issue is that some studies only look at research in terrorism journals, overlooking research in, for example, criminology or political science journals.[10] These samples are important for understanding the outlets that focus on terrorism, but a tradeoff is that they exclude research in other types of journals. This is an issue because, as the analysis below suggests, a vast amount of research on terrorism occurs outside of terrorism-only journals.

9/11 seems to have greatly affected terrorism studies. Sánchez-Cuenca argues that there have been two waves of terrorism studies: one starting with the advent of international terrorism in the 1970s, and a second wave triggered by 9/11 and jihadist terrorism.[11] This is consistent with Silke's analysis, which seems to be the one study focused on how 9/11 affected terrorism studies.[12] Similarly, some research has looked at to what extent *terrorism* changed after 9/11.[13] And while the work discussed above has provided some insight into the possible shifts in terrorism research starting with 9/11, more analysis is needed. Beyond spurring more research on jihadist terrorism, or specific tactics such as aircraft hijacking, it is unclear how 9/11 transformed terrorism studies.

The rest of the manuscript focuses on effects of 9/11 by looking at four specific topics. First, to what extent the terrorism research, and scholarly community of researchers, increased after 9/11. Second, have there been any shifts in the most common disciplinary homes (political science, economics, etc.) of scholars studying terrorism? Scholars of many backgrounds study terrorism, but the distribution of

scholars is unclear. Few studies have looked at related questions in detail.[14] Third, the gender ratio of terrorism scholars, to my knowledge, has rarely been studied, if at all. Has the percentage of female terrorism scholars has changed over time, and could it be related to in the increase in post-9/11 research? There has been a growing focus on gendered dynamics of social science research.[15] Some scholars have noted anecdotally that the number of female scholars researching terrorism has increased,[16] but specific trends and possible causes are under-explored. Finally, what countries produce the most terrorism research? It has been noted that topics like security studies are dominated by U.S.-based researchers, consistent with some broader trends in scientific production.[17] There has been less research into where terrorism knowledge is produced. New data will allow us to look at all these important topics.

Data collection

The process began with Web of Science, which indexes more than 21,000 journals, including prominent terrorism journals.[18] Most journals are in English, but many journals in other languages are included as well, often with English-language titles and abstracts.[19] We searched for all articles with the words "terrorism" or "terrorist" in the title. This is somewhat of a conservative criterion, since there certainly are articles on the subject that do not explicitly have these terms in the title. However, this is consistent with how some other authors have searched.[20] Alternate search terms, such as "insurgency," are discussed below. The focus on titles was chosen because including any article with "terrorism" in an abstract could produce many false positives, such as an article that only throws out the term as an example, but did not study it in depth. Additionally, the use of abstracts and keywords was inconsistent until recent decades, so a search seeking information from the 1970s, for example, could produce unreliable results. In all, the counts of articles should be considered low-end estimates, creating a sample that, while incomplete, is likely to be representative of the broader universe of terrorism articles.

This approach returned 6,880 articles, with a few published in the early 20th century, but a critical mass appearing in the 1970s. The searches were conducted in 2020, so December 31, 2019 was used as the cutoff date to have the complete year of 2019. The articles appeared in a broad range of journals, over 2,000, many of which only published one or two articles on terrorism. Some journals appeared frequently, and the journals with the most articles in the database include *Studies in Conflict and Terrorism, Terrorism and Political Violence, the Journal of Conflict Resolution, Defence and Peace Economics, Risk Analysis*, and *Kriminalistik*.

To obtain information about the discipline of the journal publishing the article, each journal was categorized either "psychology," "political science," "sociology," "computer science," or similar categories.[21] Some were labelled "terrorism and conflict studies," although there were really only two terrorism-focused journals until after 9/11.[22] These labels were then used to determine the prominence of different fields over time. Article information was then "collapsed" by year to have a total number of terrorism articles published per year, a total number of articles in each discipline published each year, and so forth.

Obtaining the data on terrorism *scholars* was more complex. We again started with Web of Science, and searched for the articles with "terrorism" or "terrorist" in the title. Then we requested to see the list of authors, which returned 9,986 authors. Some duplicates were identified, such as scholars listed with their middle initial on some publications, but without on others. These duplicate records were combined, reducing the sample.

To further hone the sample of terrorism scholars, it was decided to only include scholars who had authored or co-authored *at least two articles*. This acknowledges, as previous research has shown, that a good deal of terrorism research is written by scholars who only "drop in" to write one paper on the topic.[23] Focusing on repeat-article scholars is consistent with the idea of gathering information on *terrorism scholars* as opposed to scholars primarily working on another topic who happen to write or co-author one study on the subject. Additionally, gathering biographical information such as gender or discipline on nearly 10,000 authors was frankly not possible given resources. Some sub-sample was

necessary. Excluding the many authors who only authored one article on terrorism produced a sample of 1,723 terrorism scholars—all those who had published at least two articles on the topic.

Regarding the distribution of articles per author in this sub-sample, the average number of publications per author is 3, and the modal value is 2. The majority of scholars in the sample of 1,723 only publish two articles, but there are still more than 200 who publish at least 5 articles. Additionally, it is emphasized that these are conservative counts, low numbers, due to the rule of only including articles with "terrorism" or "terrorist" in the title. As a result, many of the scholars only credited with two articles probably published additional terrorism articles without these key terms in the title. In spite of the strict inclusion criteria, there are still serious outliers, a small number of scholars publishing dozens of terrorism articles. Some of these include Todd Sandler (60 articles), Sandro Galea (35), James Piazza (29), and Betty Pfefferbaum (26).

The next step was to gather information on these scholars. Variables collected included: discipline of PhD or primary discipline of work, highest degree earned, gender, year of first terrorism publication, year of final terrorism publication, and country of work at most recent publication. The author and a research assistant looked through the following sources: author affiliation information in journal articles, faculty webpages, personal webpages, and then online news articles and obituaries. These sources produced information for the vast majority of scholars.[24] Information for a small number of scholars could not be found. These records were excluded from the analysis.

The author data was then converted into *yearly* data to see trends over time. Because each scholar had a year listed for their first terrorism publication and final terrorism publication, they are considered active terrorism scholars during those years, inclusive. For example, if a scholar published one article on terrorism in 2003, and only one other in 2006, they are counted as an active terrorism scholar in 2003, 2004, 2005, and 2006. For most scholars, this is a reasonable way to estimate the approximate years that they are "active" as researchers on the topic. The average author in the sample is active for about six years, but a few scholars such as Martha Crenshaw, Todd Sandler, and Bruce Hoffman, are considered active for more than three or four decades.[25]

One potential drawback of this approach is that as scholars reach the final year of the data collection (2019), there is the possibility that they are incorrectly categorized as "no longer active" when they might in fact have research published in 2020 or 2021. For example, if a scholar publishes their first terrorism article in 2012, and a second in 2015, and a third will be probably be published in 2021, that scholar is only recorded as being "active" from 2012–2015. This is incorrect because the scholar is working on terrorism in 2016 and beyond. Another potentially concerning situation is that of a scholar who publishes their first article in 2016, for example, and is set to have a second article come out in 2020, that author will not appear in the data since they do not reach the two-article minimum before the data end in 2019. Both of these situations suggest there is likely to be an artificial decrease in scholars in the data several years before 2019. To address this, descriptive data on scholars is only reported for up to 2015. This should eliminate the vast majority of cases of false termination or exclusion, as it gives us several years to observe (2016–2019) to see if the scholar will publish again on terrorism.

Another potential limitation is that a scholar could publish only two articles many years apart, for example one in 1970, and another in 2015. This would result in their being listed as an "active" terrorism scholar from 1970–2015, when in fact they might not have been researching terrorism at all from 1970–2014. This would be inaccurate. However, the data was carefully analyzed for cases like this, and gaps of even 10 years with no publications are extremely rare. It is unlikely that this hypothetical situation would affect inferences. On balance, the approach of coding scholars as "active" from the year of their first article to the year of the last article seems to be a reasonable way to understand when scholars were studying terrorism.

It also should be acknowledged that the two samples (articles and authors) end up being different, so patterns should not be exactly the same across them. The sample of authors is a sub-sample—only the articles of authors with multiple articles. Additionally, the classification of disciplines is not the same for the two samples. Many articles are in journals that are terrorism-specific journals (e.g.,

Terrorism and Political Violence), while most authors pertain to a particular discipline, e.g., the discipline of their PhD, which is usually not "terrorism studies." Furthermore, patterns of articles and authors are likely to be different because authors do not exclusively publish in journals matching their own discipline. Many political scientists, for example, publish in terrorism journals, so political science journals do not seem as prominent as political scientists in terrorism studies. As a result, while the samples are complementary, they have differences that make it unlikely that they will demonstrate the same precise tendencies.

Analysis

Figure 1 shows a massive increase in research on terrorism following 9/11. Using the conservative criteria of articles with "terrorism" or "terrorist" in the title, there were never more than 81 such articles per year through 2000. In the decade before 2001, the average year saw about 39 such articles published. In the decade after 2001, the average increased by seven times to 283 articles per year. Longer term, the increase is greater. The post-9/11 average through 2019 is 304 articles per year. Several additional points are apparent. First, the post-9/11 increase started in 2001—in spite of the attacks occurring in September, and time required peer review. 2001 saw 168 articles on terrorism, mostly in the final months of the year. This was the triple the number in 2000 (52). It is noteworthy that so much terrorism research could be published within months of the attack.[26] Second, the 9/11 increase was not a temporary spike. Research has not declined to near pre-9/11 years in the 20 years since, suggesting some stickiness or inertia.

A third trend in Figure 1 is that in 2015–2018, a spike in terrorism research occurred. The rise of ISIS is probably be behind this. During those years, there are many articles about ISIS's territorial expansion, the related migrant crises, and attacks in Europe. The sizeable increase is perhaps surprising given the shift in U.S. government priorities those years—from counterterrorism to great power competition.[27] However, the new U.S. government policy focus, and related decrease in funding (see below), probably explains why the ISIS increase seems to have been short-lived. This is a contrast compared to the 9/11 increase, which mostly led to a new plateau.

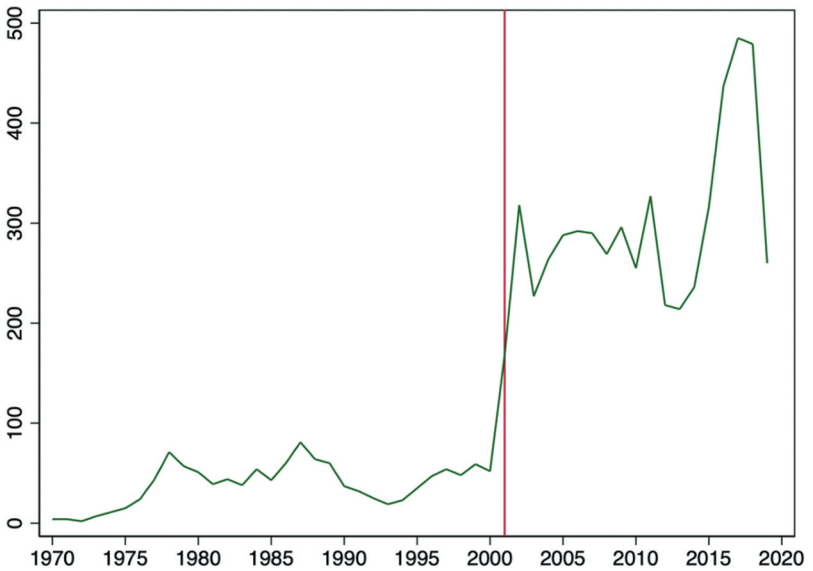

Figure 1. Terrorism articles published per year.
Count refers to all articles in Web of Science with "terrorism" or "terrorist" in the title. Vertical line = 2001.

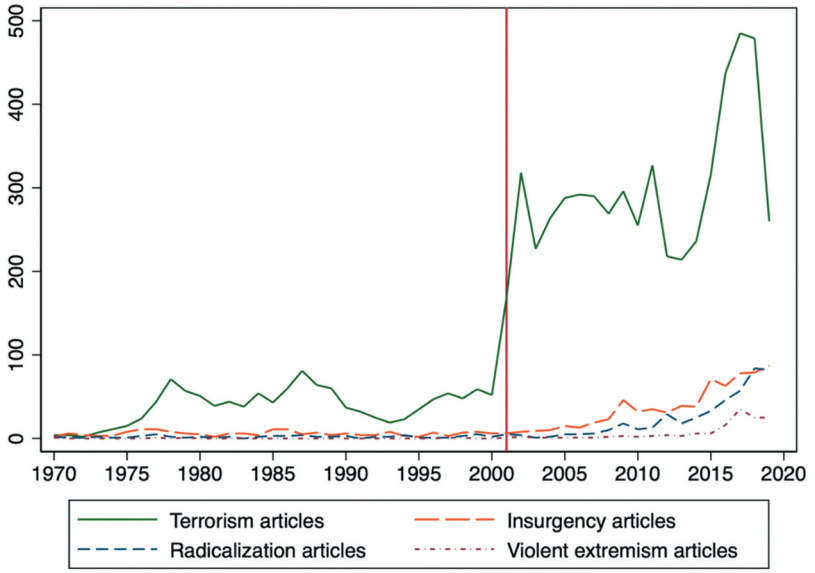

Figure 2. Terrorism articles published per year, and related concepts.
Vertical line = 2001. See text for specific search terms.

For a brief comparison of search terms, Figure 2 shows the counts of articles on terrorism, and on three overlapping concepts: insurgency, radicalization, and violent extremism.[28] Only articles on "terrorism" and "terrorist" increased substantially in the five years after 2001. In the late 2000s, insurgency articles started to seriously increase, probably as a result of growing civil wars in Iraq, Afghanistan, and other countries after the start of the "Global War on Terrorism." The eventual rise in insurgency research can be seen as a second-order effect of 9/11. Articles on "radicalization" also increased starting around 2010, as governments and scholars sought to understand individuals who adopted more extreme beliefs, sometimes resulting in terrorism.[29] Articles on "violent extremism" only start to appear more frequently after 2015, probably because the Obama administration had increasingly used this term, and more so with the rise of ISIS.[30] Work on all these topics probably increased *indirectly* because of 9/11, with other factors such as U.S. foreign policy or domestic politics as intervening variables. However, the quantity of articles on "terrorism" has almost always dwarfed the number of articles on these related concepts, and only research on "terrorism" soared immediately after 9/11.[31]

Why exactly did terrorism research increase so much after 9/11? Precise answers are difficult to obtain, and beyond the scope of this article, which is mostly descriptive. It is possible that terrorism research increased in the early 2000s because of patterns of terrorism in general. Figure 3 explores that possibility, plotting the number of terrorist attacks in the world and the number of terrorism articles per year.[32] There are some remarkable similarities, such as the 1970s increase, and the 2014 attack spike followed by a research spike. The two series are correlated at .61 (p = .00). Terrorism research seems to *mostly* follow global terrorism patterns. However, 9/11 was different. Terrorist attacks declined between the 1990s and early 2000s, while terrorism research jumped in 2001. The post-2001 surge in terrorism research was apparently not the result of broader trends in terrorism.

Figure 4 shows a different way that terrorist attack data might help explain the post-2001 increase in terrorism research. It indicates the annual number of Americans killed by terrorism, anywhere in the world, as well as terrorism articles per year. Here we see a clear connection around 2001. The number of Americans killed by terrorism, according to the Global Terrorism Database, has been quite low during most of the past 50 years. However, the spike of approximately 3,000 U.S. deaths in 2001 is followed by 2002's massive rise in research articles. It was an unprecedented number of terrorism

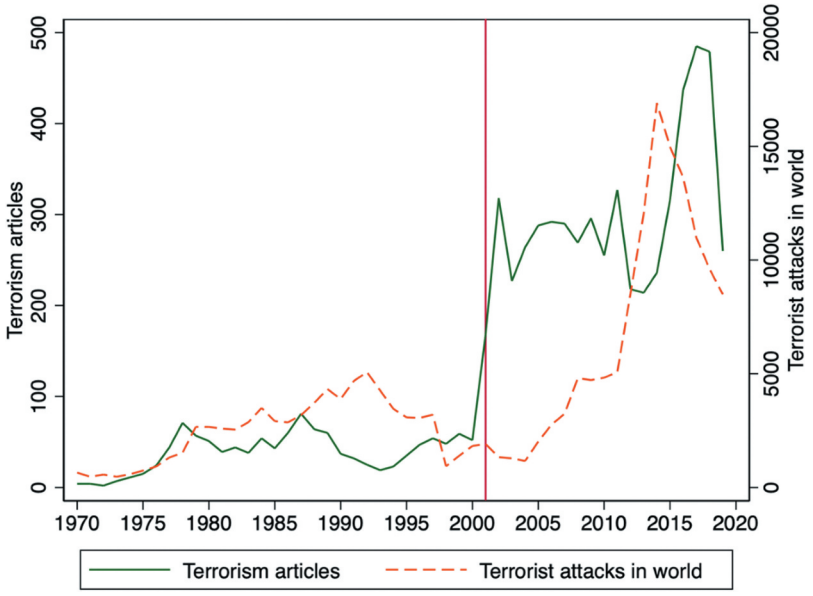

Figure 3. Terrorism articles published vs. terrorist attacks in world per year.
Vertical line = 2001. Terrorism data come from the Global Terrorism Database. Correlation = .61, p = .00.

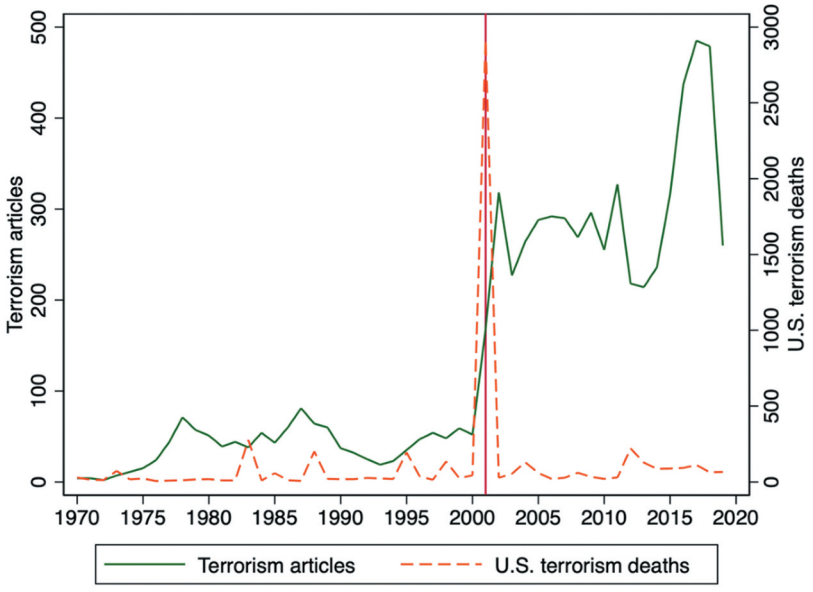

Figure 4. Terrorism articles published vs. U.S. terrorist fatalities per year. Vertical line = 2001. Terrorism data come from the Global Terrorism Database. Correlation = .06, p = .69.

deaths in a single day, and the fact that it happened to the United States—already the subject of a disproportionate amount of research[33]—made it especially likely to spur scholarship. Most of the time, U.S. terrorism deaths and terrorism research amounts are fairly independent. There is no correlation when all years are considered (.06, p = .69). However, the immense number of 2001 U.S. deaths seems to have been the catalyst for at least the initial jump in terrorism research shortly after.

Why did terrorism research not decrease to pre-9/11 levels shortly after 2002? A combination of factors is likely to be behind the sustained high volume of research. Some of the important reasons include increasing terrorism after 9/11 (see Figure 3), increased interest in the topic for normative or curiosity reasons,[34] increased government funding for terrorism research, new data on terrorism, and new terrorism journals. While general interest and curiosity seem relevant, the impact of massive amounts of funding is difficult to overstate.[35] The new U.S. Department of Homeland Security (DHS) —created as a direct response to 9/11—poured billions of dollars into security research.[36] Other departments, such as the Department of Defense and Department of Justice, increased their research funding immediately after 9/11 as well.[37]

Since DHS is the most terrorism-focused department, Figure 5 displays terrorism articles and DHS research and development funds.[38] DHS spent 376 USD million on research and development in 2002, and an average of just over a billion dollars each year after that.[39] Funding and research seem to track together (with funding slightly antecedent, as one could expect) in a drop starting in the financial crisis of 2007–2009, and then in increases probably related to ISIS. Overall, there is no correlation between the two (−.25, $p = .31$), probably because the funding decreases in the 2010s while terrorism increases. However, if DHS funding is assumed to be zero before 2002 (instead of missing), DHS funding and terrorism research are highly correlated (.81, $p = .00$).[40] Beyond DHS, as noted above, terrorism-related research funding in other U.S. agencies greatly increased after 9/11 as well, encouraging continued high levels of terrorism research. The abundance of funding seems to help explain part of why terrorism research remained robust for two decades after 9/11.

Regarding new terrorism journals as a contributing factor to the sustained high levels of terrorism research, Figure 6 shows how the number of terrorism-specific journals increased over time.[41] The counts of terrorism articles and terrorism journals are, perhaps unsurprisingly, highly correlated (.77, $p = .00$). Schuurman notes that there were only two main terrorism journals before 9/11, but *seven* were founded in subsequent years.[42] Additionally, the two pre-9/11 terrorism journals, *SCT* and *TPV*, substantially increased the number of issues they published per year.[43] More broadly, 9/11 spurred more general journals to publish work on terrorism.[44] Consistent with this, post-9/11 terrorism journals were only founded starting in 2007—so the increase in journals followed the increase in

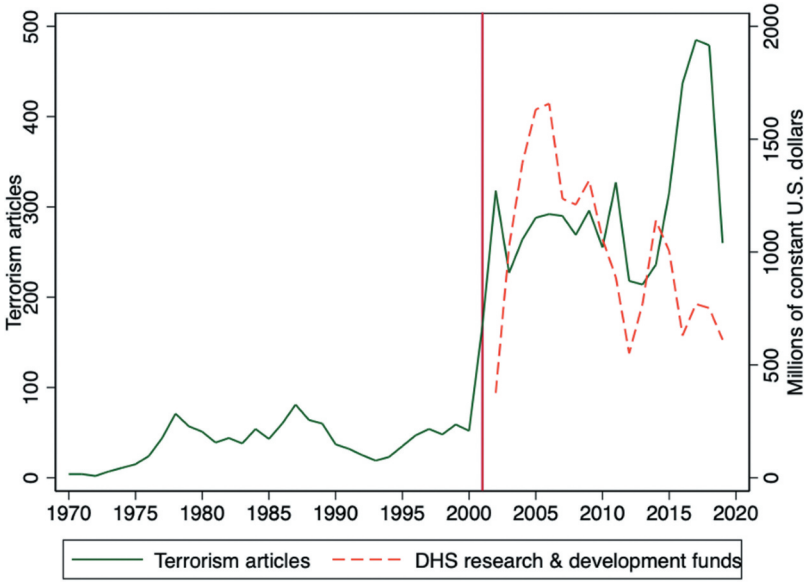

Figure 5. Terrorism articles and U.S. department of homeland security research funding.
Vertical line = 2001. DHS was created in 2002. Correlation = −.25, $p = .31$. If DHS R&D is assumed to be zero instead of missing before 2002, the two series are highly correlated at .81, $p = .00$.

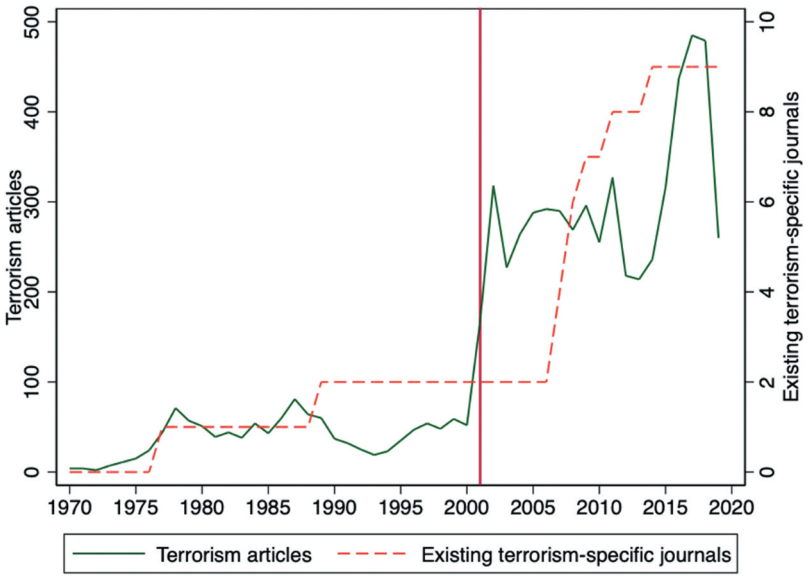

Figure 6. Terrorism articles and the growth in terrorism-specific journals.
Vertical line = 2001. The terrorism journals and their start years come from Schuurman 2020.

terrorism research, and not vice versa. The surge of work immediately post-9/11 appeared mostly in other types of journals, from medicine to economics. Longer term, however, once new terrorism journals were established, this created a new level of demand for terrorism articles, perhaps "locking in" a higher amount of terrorism research. The new journals facilitated the ISIS spike in terrorism research, and they make a decline to pre-9/11 levels of research less likely.

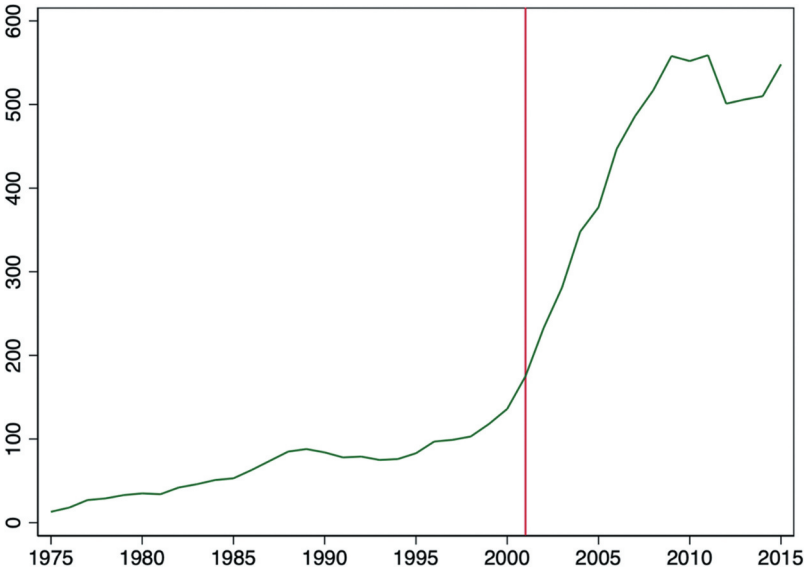

Figure 7. Terrorism authors active per year.
Count refers to all scholars with at least two articles in Web of Science with "terrorism" or "terrorist" in the title. "Active" refers to the years between their first and last such article, inclusive. Vertical line = 2001.

Shifting to a different outcome, the number of scholars working on terrorism, Figure 7 shows the number of research-active terrorism scholars by year, and the increase following 9/11 is clear. There were 140 active terrorism scholars in 2000, which doubled by 2003, and nearly quadrupled by 2009, to 553. Regarding broader trends, the number of scholars working on terrorism looks about as we might expect before 2000. There is a gradual increase over time, with a slight peak in the late 1980s, the Reagan era. Then there was a levelling off through the mid-1990s, as security scholars focused attention on topics such as the Persian Gulf War or the post-Cold War order. The number of scholars publishing on terrorism starts increasing again in the late 1990s, and jumps from 2000 to 2001, a 28-percent increase. (This is consistent with the article data, as scholars published 9/11-related research late in 2001.) Another notable pattern in the data is that it seems to plateau after 2009, and even decreases slightly starting in 2010. The slight decrease is consistent with Figure 1, and the DHS funding data, perhaps related to the financial crisis. One difference between articles and authors information is that the articles data goes through 2019, showing a substantial increase after 2014. The data on authors ends in 2015, for methodological reasons described previously, so it is not able to show such a trend.

Regarding the *disciplines* of journals publishing terrorism research, 9/11 seems to have affected this as well. Across all disciplines, the absolute number of publications in each discipline increased after terrorism. However, in terms of each discipline's percent of the total share of terrorism articles, there are a few clear patterns. One change involves terrorism and conflict journals, such as the *Journal of Conflict Resolution, Studies in Conflict and Terrorism*, and *Terrorism and Political Violence*. These journals' share of terrorism research decreased after 9/11 as many other journals, in a broad range of disciplines, started publishing work on the subject. This relative decrease is noteworthy because, as discussed, the number of terrorism journals increased over time. In spite of the substantial increase in terrorism research in terrorism journals, the *share* of terrorism publishing by these journals (and conflict journals more broadly) still dropped after 9/11, and remains lower than it had been in most of the pre-9/11 era.

Figure 8 shows the percent of terrorism articles in terrorism and conflict journals. Numbers are erratic in early decades, as the percentages are of a relatively small total number.[45] Still, before 9/11, terrorism and conflict journals published a substantial portion of terrorism research. They published 40 percent or more in several years, and topped 50 percent in the late 1980s. After 2001, however, these

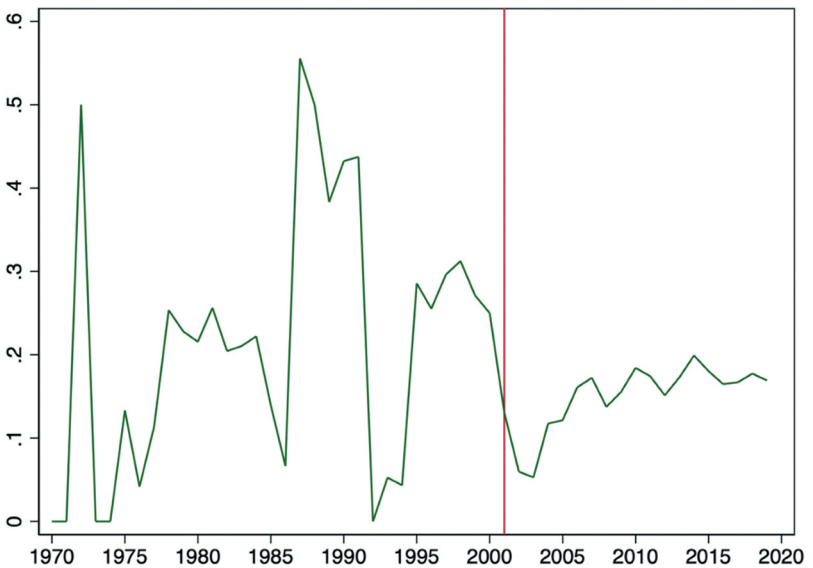

Figure 8. Percent of terrorism articles that appear in terrorism and conflict journals.
Percentage is of all articles in Web of Science with "terrorism" or "terrorist" in the title. Vertical line = 2001.

journals published on average about 15 percent of terrorism articles. In 2002, with a broad variety of journals publishing terrorism-related work, terrorism and conflict journals published only about 6 percent of these articles. They never again reached 20 percent. Overall, Figure 8 suggests that 9/11 opened up other types of journals to the possibility of publishing research on terrorism.

Another pattern in the data is that some disciplines increased their terrorism publishing at a much steeper rate than other disciplines. Table 1 shows, for the disciplines publishing the most terrorism research, how much of an increase each discipline saw in their number of terrorism articles before and after 9/11. Terrorism and conflict journals—in spite of the *relative* decrease shown in Figure 8—increased their terrorism research substantially in absolute terms, and maintained a solid plurality of terrorism research. More generally, Table 1 indicates that several disciplines increased their terrorism articles by a factor of five or six. For example, criminology journals published about three terrorism articles per year before 2001, according to the methodology used. Between 2002 and 2019, however, criminology journals published about 17 terrorism articles per year. Four disciplines show more dramatic increases after 9/11. The counts of terrorism articles in economics, medicine, political science, and psychology journals each increased by a factor of at least 10.

Economics and psychology journals had the biggest increases, by a factor of 24.5 or 21, respectively. These considerable increases were in part helped by their relatively low pre-9/11 quantities, only about one terrorism article pear year for each discipline. Additionally, much of the work in these disciplines is quantitative, and new quantitative data produced after 9/11 spurred on such research. New grant funding for social science research likely contributed as well. Additionally, a few scholars in each discipline have published prolifically on terrorism, and especially since 9/11 have organized journal special issues, coordinated edited volumes, trained doctoral students, and/or founded journals on terrorism. This has created an infrastructure that has encouraged other scholars to research the topic—facilitating the massive increases in terrorism research in their respective disciplines. Examples of such scholars include Todd Sandler in economics, and Clark McCauley and Andrew Silke in psychology. Regarding the rise in economics research in particular, the unprecedented economic consequences of 9/11 were probably also influential in spurring research on terrorism by economists.[46]

While all disciplines increased their terrorism article output after 9/11, and some increased much more than others, there is additional heterogeneity in the increases. As an example, two of the disciplines with the largest increases, medicine and psychology, are shown in Figure 9. The number of terrorism articles in journals of each discipline increased substantially after 9/11, with medical journals publishing more than psychology in several years immediately after the event. However, the surge of terrorism research in medical journals was more of a spike than a sustained increase. The number of terrorism articles in medical journals dropped to pre-9/11 levels by 2014, although there

Table 1. Post-9/11 increases in terrorism articles, by discipline of journal.

Discipline or field of journals	Average number of terrorism articles per year, 1970–2000	Average number of terrorism articles per year, 2002–2019	Factor of post-9/11 increase
Area/regional studies	3.1	12.1	3.9
Arts and Literature	2.8	13.3	4.8
Criminology	2.7	17	6.3
Economics	**.74**	**18.1**	**24.5**
Engineering	1.3	8	6.2
International Relations	2.7	15.5	5.7
Law	2.6	21.7	8.3
Medicine	**1.6**	**19.7**	**12.3**
Political Science	**1.5**	**17.1**	**11.4**
Psychology	**1**	**21**	**21**
Social science general	2.3	9.8	4.3
Terrorism and conflict	10.1	46.5	4.6

The most common disciplines or fields are shown, alphabetically. **Boldface** indicates the largest increases.

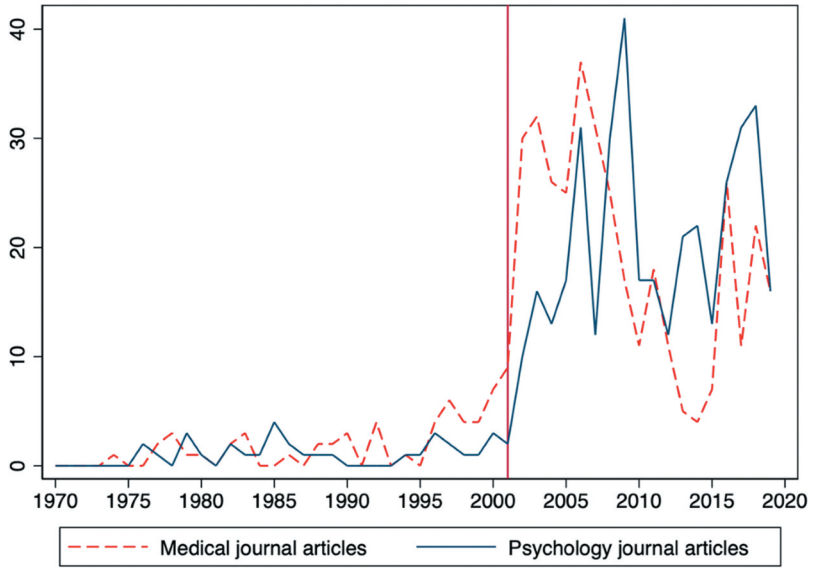

Figure 9. Terrorism articles published per year, by discipline of journal.
Count refers to all articles in Web of Science with "terrorism" or "terrorist" in the title. Vertical line = 2001.

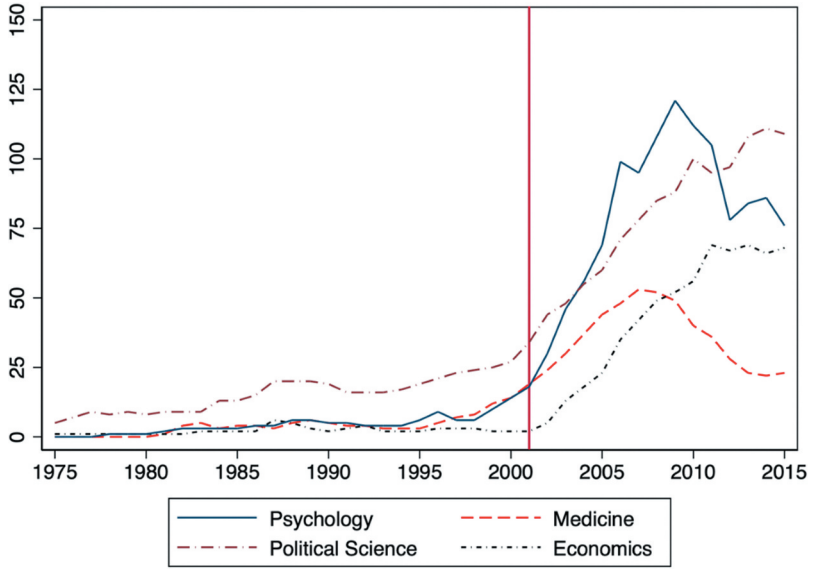

Figure 10. Active terrorism authors by discipline, in prominent disciplines.
Count refers to all scholars with at least two articles in Web of Science with "terrorism" or "terrorist" in the title. "Active" refers to the years between their first and last such article, inclusive. Vertical line = 2001.

was another increase after this. Psychology journals, meanwhile, showed more consistent high levels of terrorism research.

With respect to authors, there are considerable differences across disciplines as well. Figure 10 shows the number of authors, by discipline, for the four most prominent disciplines in the author data. The four disciplines most-often occurring in the author data are psychology, political science, economics, and medicine. The graphic shows that the number of authors publishing in terrorism, in each discipline, dramatically increase after 9/11. However, there are changes across disciplines.

Perhaps most prominently, there is a switching of "Number 1" places, where political science had been the top disciplinary home of terrorism scholars through 2001, but starting in 2003, psychology gains the plurality of scholars publishing terrorism articles. From 2003 to 2011, there were more terrorism scholars from psychology than any other discipline. Some of this work was on psychological causes of terrorism, but a great deal also looked at psychological effects.[47] In 2012, political science reclaimed the plurality.

Considering other disciplines in Figure 10, medicine and economics show somewhat parallel trends to those seen with psychology and political science, respectively. Medicine, which includes scholars who are physicians or surgeons, has its peak in 2007, and substantially decreases by 2010. As with psychology, much of this work was on (health) consequences of terrorism. Immediately after 9/11, interest in this topic increased, and the work was often on effects of 9/11 itself.[48] There was also, for example, Israeli research on medical effects of the second Intifada in Israel (2000–2005), but the bulk of the work in the early 2000s seems to be related to 9/11. Overall, the increase in health research on terrorism shown here is consistent with Gordon's findings.[49] Within a decade after 9/11, however, there was a declining number of medical researchers actively publishing on terrorism. Economists, by contrast, came to terrorism studies in large numbers after 9/11, and those numbers were still increasing in 2015.[50]

Regarding other disciplines, the data on authors includes scholars from fields such as sociology, criminology, history, and computer science. However, the number of authors from these disciplines is relatively small, and did not increase as much after 9/11, so the lines associated with these disciplines would be more flat and close to the bottom of Figure 10 if included—making it difficult to distinguish between them. This is consistent with information shown in Table 1 regarding other journals from other disciplines.

To further explore this trading of places between political science and psychology, and because these are the two most prominent disciplines in terrorism studies according to the author data, Figure 11 looks at their trends over time in more detail. It shows the share (percentage) of active terrorism authors in each discipline, instead of the total number of active authors. This to some degree sets aside the increase in articles after 2001, which was the main visible trend in Figure 10. In Figure 11,

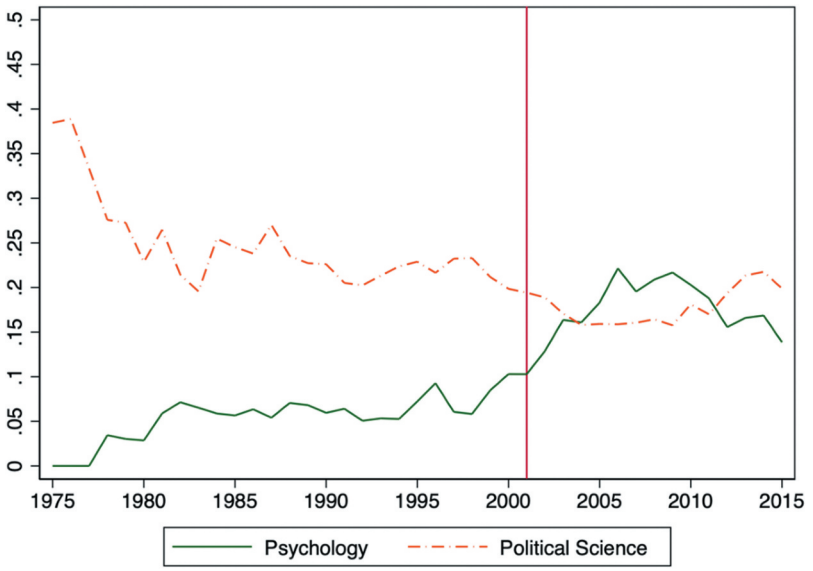

Figure 11. Share of terrorism authors in two prominent disciplines.
Vertical line = 2001.

we see that political scientists were between 20–25 percent of the terrorism authors through the 1980s and 1990s. After 2001, however, they dropped to a low of 16 percent and remained there for six years. Scholars of psychology, meanwhile, made up less than 10 percent of active terrorism authors in most years of the 1990s, but nearly doubled their share after 9/11. Psychologists were more than 20 percent of active terrorism researchers from 2005–2011. Political scientists regained their lead in 2012 as the plurality-publishers of terrorism research, surpassing 20 percent of terrorism researchers in 2013–2015.

Beyond differences across disciplines, there is also a gender trend over time. Figure 12 shows the percent of terrorism article authors who are female, as it changes over time. The percentage increases gradually before pre-9/11, mostly ranging from 5 percent to 13 percent over more than 25 years. By 2002, however, the percentage had jumped to 17 percent, and the trend line of the post-9/11 years steepened. By 2015, 30 percent of scholars publishing on terrorism were female. The share of women in terrorism studies, on average, increased an average of less than one third of a percentage point per year up between 1975 and 2001. Starting in 2001, however, it increased an average of one percentage point per year.[51] The difference in the pre-9/11 and post-9/11 slopes suggest 9/11 may have played a role. There of course has been a gradual increase in the percentage of women in academia, and academic publishing, over time. However, the sharp rise and change in slope suggests 9/11 was a pivotal moment regarding the gender composition of terrorism studies.

Figure 13 shows the percentage of female scholars among those with at least four articles in the data set. This threshold is used to capture "high-publishing" scholars, since only about 20 percent of those authors with multiple articles on terrorism have published at least four. Among these high-publishing scholars, women make up 10–15 percent most years before 9/11. After 2001, the percentage remained above 20 percent for every year. The increase in female scholars among these researchers started in the late 1990s. Nonetheless, the increase continued until its peak in 2007, after which the rate seems to have reached a plateau. Beyond the increase over time, in general women are slightly under-represented among the "top-publishing" scholars compared to the broader sample. Of the 100 authors with the most terrorism articles, 21 percent are female. This is lower than the percentage of women in the entire sample of author with at least two articles, of which 26 percent are female. Given that the

Figure 12. Percent of terrorism article authors who are female.
Vertical line = 2001.

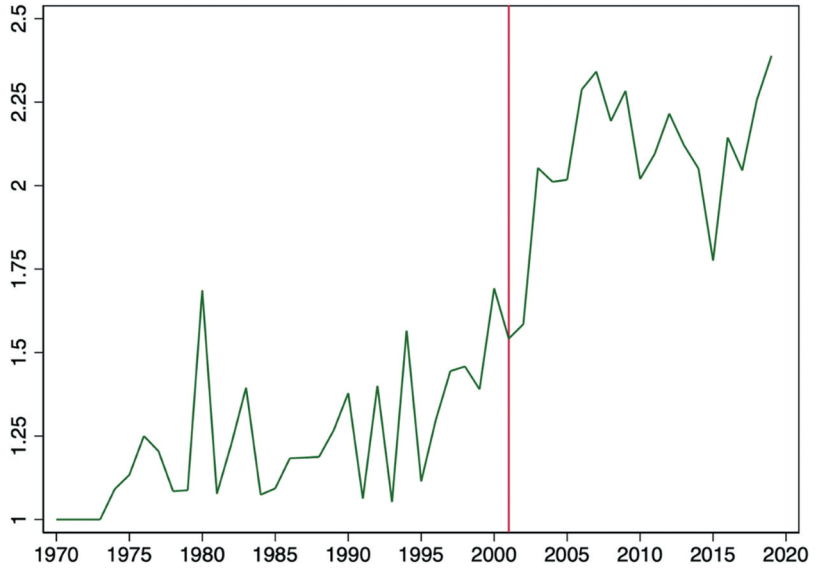

Figure 13. Percent of high-publishing terrorism authors who are female.
Vertical line = 2001. "High-publishing" means scholars who published at least 4 terrorism articles.

percentage of women in terrorism has increased so much in recent decades, the gap between these two values is likely to decrease with time.

Why might have the gender makeup of terrorism scholars changed over time? Variations in the disciplinary distribution of terrorism scholars are probably at least part of the explanation. As Figure 10 indicated, political scientists made up the plurality of terrorism scholars for all years before 2001. Political science has been a relatively male-dominated discipline. In 2001, for example, women were only 22 percent of U.S. political science faculty.[52] During the same year, however, women were 37 percent of U.S. psychology faculty.[53] Throughout the 1990s and 2000s, the psychology female percentage was always at least 10 percentage points higher than that of political science. Furthermore, the rates for both psychology and political science increased slowly over time, so the rise in female participation in terrorism studies shown in Figures 12 and 13 probably has another explanation. The fact that psychologists substantially increased their involvement in terrorism research around the time of 9/11, and then overtook political scientists as the most numerous terrorism scholars, probably contributed to the shift in the gender ratio of terrorism scholars.

The authors data discussed previously (Figures 10 and 11) suggest that political scientists have regained their position as the plurality publishers in terrorism studies. This raises questions about a possible link between the surge in psychologists and increased female representation. It could also be that the increase in female terrorism scholars (for a variety of reasons) after 9/11 created a critical mass of female mentors and role models for future scholars.[54] This would explain why the percentage of female scholars kept rising even as scholars from psychology apparently became a smaller percentage of terrorism scholars more recently. Regardless, it will be important to see if the gender ratio in terrorism studies changes in the coming years, and to think about why this might occur.

Beyond gender differences, a related potential implication of disciplinary shifts in terrorism studies has to do with co-authoring. Figure 14 shows the average number of authors per article per year. This is relevant because other studies have sought to examine if co-authoring was becoming more common in terrorism studies.[55] Co-authoring is important because collaborative research seems beneficial to the advance of science.[56] Figure 14 indicates there is an increase in the number of authors per article over time, from an average of 1.2 in the pre-9/11 era, to 2.1 after it. The increase is not gradual, but seems to jump just after 2001, and remain at about the same level afterward.

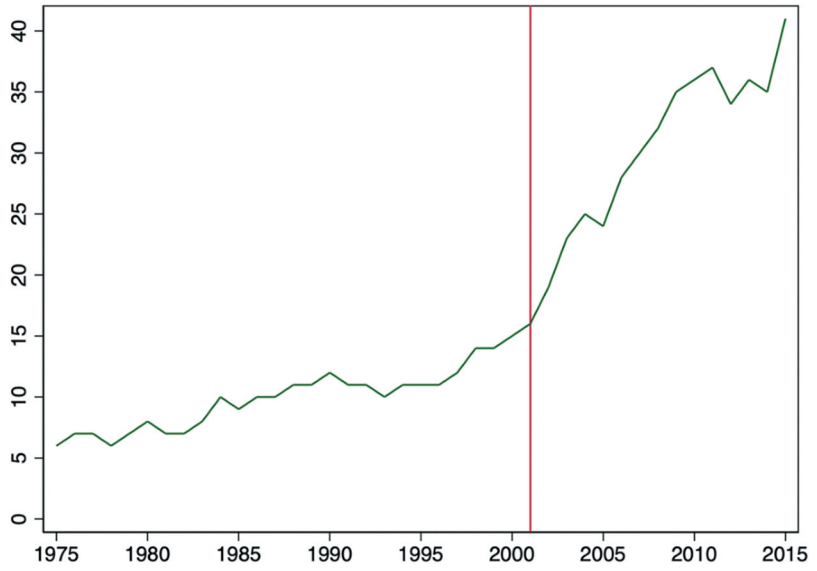

Figure 14. Average number of authors per terrorism article.
Data come from articles in Web of Science with "terrorism" or "terrorist" in the title. Red line = 2001.

As with the gender dynamics, it seems likely that the increase is at least partially explained by the *disciplines* of terrorism authors before and after 9/11.[57] In political science, and other disciplines more common in terrorism studies pre-9/11, solo-authored work is relatively common. In disciplines that flourished after 9/11, such as psychology and medicine, co-authorship is more common, and teams of co-authors tend to be larger. Overall, the findings confirm the increase in scholarly collaboration that others have noticed. However, this longer-term analysis suggests that the increase occurs precisely around the time of 9/11. It also suggests a reason why: disciplinary shifts in terrorism authorship.

Another way that 9/11 might have affected terrorism studies is through creating a more internationally-diverse set of scholars. Of the 1,723 scholars of multiple terrorism articles, we were able to identify their primary institutional affiliation, and its country, for 1,700. As Figure 15 indicates, terrorism scholars worked in around 10 countries for most years before 2001. These countries, as might be expected, were mostly North American or Western European, along with a few others such as Israel. The pool of researchers slowly internationalized, going from 11 countries in the late 1980s to 15 by 2000. After 2001, however, the number of countries with scholars publishing terrorism research increased markedly, doubling to 30 countries by 2007. Countries with terrorism scholars that year included China, India, Pakistan, South Korea, and Turkey. By the 2010s, terrorism scholars were publishing in Argentina, Cameroon, Lebanon, and Nigeria. This post-9/11 geographic diversity of knowledge production is notable given the traditional dominance of academic publishing by scholars in wealthy Global North countries.[58]

The increase in countries producing terrorism research is probably due to several factors. After 9/11, global interest in terrorism increased. This might have happened to some extent in a grass-roots way, as individuals (including researchers) around the world became curious about the phenomenon. There was also a top-down or government-led diffusion of terrorism interest. Countries joined the United States as partners in the Global War on Terrorism, and the focus on terrorism and counter-terrorism spread throughout the world.[59] Consistent with this, NATO member Turkey founded a terrorism journal in 2008, the *Defence Against Terrorism Review*. The post-9/11 international diffusion in terrorism interest was sometimes tied to U.S. aid.[60] Beyond 9/11 leading the U.S. government to encourage terrorism research internationally, there was also a related backlash to the U.S.-led focus on terrorism, often under the umbrella of critical terrorism studies. This type of

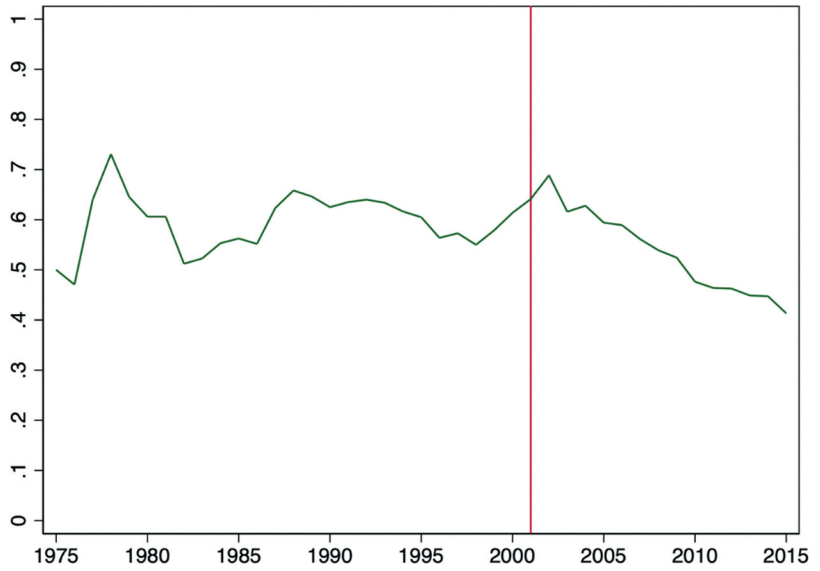

Figure 15. Number of countries with scholars producing terrorism research.
Vertical line = 2001. Count refers to the country associated with each terrorism scholar's home institution.

research often comes from scholars in non-Western countries.[61] More generally, the more accessible publishing environment after 9/11—more terrorism journals, including open-access journals—combined with growing internet access globally probably also contributed to the increasing internationalization of terrorism research.

Some of the increase in geographic diversity of terrorism scholars probably would have happened without 9/11. In science generally, there has been a *gradual* increase in the share of publications from non-U.S.-based authors regardless of the events of 2001.[62] However, the steepness of the slope of the post-2001 line in Figure 15 suggests 9/11 played a role, and there are reasons to believe that 9/11 encouraged scholars around the world to study terrorism.

Figure 16 explores a related issue, to what extent the U.S. share of researchers has changed since 2001. Throughout the data, far more terrorism researchers are based at U.S. institutions than those of any other country. Of the 1,700 scholars with country information, 747 are in the United States. The countries with the next-highest numbers of scholars are the United Kingdom (188) and Israel (132). The majority of terrorism researchers were at U.S. institutions in almost all years before 2001. Did 9/11 have an impact on U.S. dominance of terrorism studies? Figure 16 shows that immediately after 9/11, the share of U.S.-based researchers reached 69 percent, a high not seen since the 1970s. This is likely because U.S.-based scholars in particular rushed to research this topic that directly affected the country in which they worked. However, in the years after 2001, a downward trend appears. The U.S. share of researchers decreased almost every year, as a growing number of scholars from other countries start to publish on terrorism as well. U.S.-based scholars lost their majority in 2010. By 2015, the share of terrorism scholars at U.S. institutions was only 41 percent.[63]

Some readers might be curious if the decline in the share of U.S.-based scholars has implications for terrorism research in terms of gender or discipline. Gender ratios are fairly similar between U.S.-based and non-U.S-based scholars, although there has been slightly more female representation at U.S. institutions. Between 1975 and 2001, about 10 percent of U.S.-based terrorism scholars were female, and the percentage was 7 percent for those outside the United States. After 9/11, the percentages were 25 percent and 23 percent respectively. If the U.S. share of scholars continues to decrease, this could slightly slow the growth toward gender parity. Regarding disciplines discussed earlier, there are some distinctions regarding the relative numbers of political scientists or

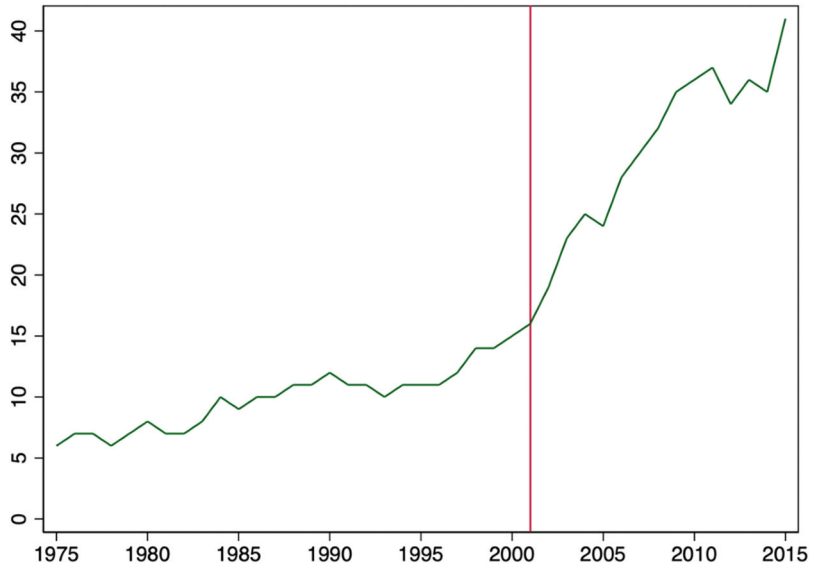

Figure 16. U.S.-based scholars as a percent of terrorism scholars.
Vertical line = 2001

psychologists. Between 1975 and 2001, political scientists made up 36 percent of *U.S.-based* terrorism scholars, while psychologists were only 2 percent. After 2001, political scientists decreased to 23 percent of U.S.-based terrorism researchers, while psychologists increased to 15 percent. Outside the United States, political scientists and psychologists were about the same share of terrorism researchers before 2001: 10 percent and 11 percent respectively. In the 15 years after 9/11, the share of non-U.S.-based political scientists stayed almost the same, 11 percent, while the share of non-U.S.-based psychologists nearly doubled, to 21 percent. On the whole, the relative dominance of political scientists in terrorism studies seems to have mostly been a U.S. phenomenon. The post-9/11 surge in psychologists researching terrorism, however, was a global phenomenon. If the share of U.S.-based scholars continues to decrease, psychologists might regain their plurality among terrorism researchers.

Discussion and conclusions

The attacks of 9/11 had monumental consequences of many types. The unprecedented violence of 9/11 seems to have also shaped the very study of terrorism. Previously, there have only been a few studies analyzing how 9/11 affected terrorism research, and they mostly examined only a few years after 9/11. This manuscript sought to contribute to these discussions by analyzing thousands of articles on terrorism between 1970 and 2019, and the more than 1,500 authors of multiple terrorism articles, to see how 9/11 influenced research on terrorism.

Several findings stand out. The surge in terrorism research seems to have remained, and apparently even increased again in recent years. Regarding authors, the number of scholars working on terrorism also rose steeply after 9/11, and has not diminished. With respect to types of journals, terrorism and conflict journals were a home to much of the terrorism research before 9/11, and remain the plurality of journals publishing terrorism research, but their share dropped after 2001 as journals in other disciplines published an increasing amount of terrorism research. Looking at other types of journals, and the disciplines of authors, suggests that psychology research increased substantially after 9/11. In general, medical and health research on terrorism became more common.

The increase in psychologists in the field seems to have had an impact on an under-studied aspect of terrorism studies: the gender ratio among terrorism researchers. Female authors made up a small but

growing share of terrorism researchers before 9/11. After 9/11, however, the rate of growth increased markedly. This is apparently at least in part because psychologists suddenly made up a large portion of terrorism researchers, and psychology has consistently had a higher percentage of women than the pre-9/11 dominant terrorism studies field, political science. Disciplinary shifts might have contributed to collaboration patterns as well. The average number of authors on a terrorism article almost doubled from the pre-911 era to the post-9/11 years, and this seems to be linked to the fact that scholars coming to the topic after 9/11 were more likely to be from fields where collaborative research is more common. A final pattern examined was that of the geographic diversity of terrorism researchers. Scholars in the United States published the majority of terrorism research in most years before 2001, somewhat consistent with the outsized role of the United States in science production more broadly in the 20th century.[64] However, the U.S.-based share of terrorism scholars has decreased steadily since 9/11, as scholars around the world increasingly study the subject.

Beyond showing apparent effects of 9/11, the paper also sheds light on terrorism studies in broader ways. One contribution is identifying the most prominent disciplines in the field. Another is demonstrating the sheer number of terrorism scholars. It has been noted (and lamented) that many authors who publish on terrorism are one-time contributors, non-specialists who primarily study other topics.[65] However, my analysis identifies more than 1,500 authors of multiple articles. Additionally, analyzing the gender breakdown among terrorism authors had not previously been done to my knowledge, and it raises additional questions, discussed below.

Limitations of the research should be acknowledged. Searching only for articles with "terrorism" or "terrorist" in the title excludes work that only has terms such as "insurgency" or "political violence" in the title instead, or specific names of groups. Additionally, searching articles excludes books and other sources. Limiting searches to article titles, instead of abstracts, overlooks articles with "terrorism" only in the abstract. It is possible that these issues have affected findings. Future research could use a broader range of keywords, or search books, conference presentations, and dissertations. Searches could look beyond article titles, and examine abstracts or full text as well. Searches could also employ search terms in non-English languages. There are tradeoffs with different search approaches, but as more analyses are conducted, using different techniques, we can have more confidence regarding generalizations about terrorism research and researchers.

The findings raise important questions, and suggest paths for additional research. Regarding the relatively low share of terrorism studies articles published in terrorism and conflict journals since 9/11: How does the body of research in terrorism journals compare to the body of terrorism research in other types of journals? Are scholars who primarily read terrorism journals missing key findings elsewhere? More broadly, regarding the diverse disciplinary homes of scholars: To what extent is terrorism research siloed in different disciplines or journals? If we want to claim that terrorism studies is building cumulative knowledge, but distinct communities of scholars are not communicating with each other, this would be a concern.

The finding about the female share of terrorism researchers suggests a need for more analysis of gender among terrorism scholars. Other disciplines or fields of study have examined gendered dynamics of journal article acceptance rates, citation patterns, and co-authorship.[66] There is a rich body of research studying gendered aspects of terrorism,[67] but there has been very little analysis of gendered issues in terrorism research production and publication. Some possible lines of inquiry include: Which terrorism journals publish more work by female scholars? How is the gender of an author, or the gender composition of a team of scholars, related to the likelihood of a manuscript eventually being accepted for publication? How does the gender ratio among terrorism scholars compare to that of other disciplines or topics of study? Scholars have examined similar questions for other disciplines or fields, drawing valuable and sometimes troubling conclusions.[68] The findings about geographic diversity raise questions as well. What explains the diffusion of terrorism research internationally? How does terrorism research differ across distinct countries and regions?

Scholars can draw on the newly-introduced data in a number of ways.[69] One possible project would be to identify the most prominent scholars in the data, and examine their biographical data to see what

that can tell us about terrorism studies. Previous articles have made lists of such scholars, but usually with data ending just after 9/11 (e.g., 2003), missing the many hundreds or thousands of scholars who may have started working on the topic in the interim.[70] Regarding the countries that terrorism scholars work in: Why are some countries under-represented, and others over-represented? Additionally, while this project gathered data on the authors of multiple articles, one could gather biographical data on the thousands of other authors of terrorism research. It would be worthwhile to see what differences exist comparing authors of single articles to authors of multiple articles, to see how these contributors differ from other terrorism scholars. Regarding the data on articles, the corpus could be examined to see which topics appeared regularly, or which countries were studied more than others.

9/11 reshaped terrorism studies in important ways. It is difficult to think of another single-day event that so profoundly affected an area of research. It inspired thousands of individuals to start researching terrorism. This influx transformed the nature of terrorism studies in multiple ways, such as the disciplinary perspectives used and the gender ratio of scholars. Some of these changes seem to have been temporary, while others remain. Additional research can help us further understand how terrorism studies continues to evolve, and how it might change in the future.

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No potential conflict of interest was reported by the author(s).

Notes on contributor

Brian Phillips is a reader in the Department of Government at the University of Essex, and an affiliated professor at CIDE in Mexico City. His research and teaching interests include terrorism, civil conflict, and crime.

ORCID

Brian J. Phillips http://orcid.org/0000-0002-9812-4030

Notes

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10. Most scholars do not view terrorism studies as its own discipline, but as a multi- or inter-disciplinary topic or field analysed by scholars from disciplines such as criminology, law, political science, and psychology. See for example Avishag Gordon, "Can Terrorism Become a Scientific Discipline? A Diagnostic Study," *Critical Studies on Terrorism* 3, no. 3 (2010): 437–58; Lisa Stampnitzky, *Disciplining Terror: How Experts Invented'Terrorism'*, (Cambridge University Press, 2013); and Mark Youngman, "Building "Terrorism Studies" as an Interdisciplinary Space: Addressing Recurring Issues in the Study of Terrorism," *Terrorism and Political Violence* 32, no. 5 (2020): 1091–105.
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13. Walter Enders and Todd Sandler, "After 9/11: Is it all Different Now?" *Journal of Conflict Resolution* 49, no. 2 (2005): 259–77.
14. Gordon's study, through 2010, is one exception.
15. Michelle L. Dion, Jane Lawrence Sumner, and Sara McLaughlin Mitchell, "Gendered Citation Patterns across Political Science and Social Science Methodology Fields," *Political Analysis* 26, no. 3 (2018): 312–27; Kristen Monroe, "Tougher Standards for Female Scholars? The Psychology Behind Them and Policies to Eliminate Them," *International Studies Perspectives* 14, no. 4 (2013): 476–84; and Damien Van Puyvelde and Sean Curtis, "Standing on the Shoulders of Giants': Diversity and Scholarship in Intelligence Studies," *Intelligence and National Security* 31, no. 7 (2016): 1040–54.
16. On conflict studies more broadly, see: Theodora-Ismene Gizelis, "Systematic Study of Gender, Conflict, and Peace," *Peace Economics, Peace Science and Public Policy* 24, no. 4 (2018).
17. See for example Fiona B. Adamson, "Pushing the Boundaries: Can We 'Decolonize' Security Studies?" *Journal of Global Security Studies* 5, no. 1 (2020): 129–35; and Cullen S. Hendrix and Jon Vreede, "US Dominance in International Relations and Security Scholarship in Leading Journals," *Journal of Global Security Studies* 4, no. 3 (2019): 310–20.
18. Not all terrorism journals are indexed in Web of Science. For example, it does not include *Perspectives on Terrorism* or the *Combating Terrorism Center Sentinel*. However, it does index *Behavioral Sciences of Terrorism and Political Aggression, Critical Studies on Terrorism, Studies in Conflict and Terrorism*, and *Terrorism and Political Violence*.
19. While we used English-language search terms, the "All languages" option was selected to include non-English-language articles that have titles in English as well as their primary language—a practice many journals use to maximize visibility. Some examples of journals not in English, but publishing research with "terrorism" or "terrorist" in article titles, are Annales Françaises de Médecine d'Urgence (French), Internasjonal Politikk (Norwegian, Swedish, and Danish), Revista de Ciencias Sociales de la Universidad de Costa Rica (Spanish), and Sotsiologicheskie issledovaniia (Russian). The majority of journals are headquartered in North America or Europe.
20. Silke used this approach to count books on terrorism. Andrew Silke, "Contemporary Terrorism Studies," in *Critical Studies: A New Research Agenda* , ed. Richard Jackson, Marie Breen Smyth, and Jeroen Gunning, Chapter 2 (London/New York: Routledge, 2009): 34–48.

21. To have specific categories, we tried to avoid labelling journals as "interdisciplinary" if possible. If a journal was not clearly of one discipline, we would look at the primary field of study of the editor(s), editorial team, and/or editorial board to see if a majority came from one field or another. A small number of journals was too divided to put into one discipline or another, but this ended up being just about 1 percent of articles, not enough to affect general patterns.
22. *Studies in Conflict in Terrorism* was founded in 1977 as *Terrorism*, changing to its current name in 1992. *Terrorism and Political Violence*, previously called the *Journal of Terrorism Research*, was founded in 1989. Other terrorism journals were started in 2007 or later. See Schuurman 2020 for more discussion.
23. See Silke 2007, Silke 2009, and Schuurman 2020 above.
24. To determine gender, we used a combination of first names if highly likely to be indicative (e.g., David or Linda), photographs on websites if available, and pronouns used to refer to the author if found. This produced sufficient information for most scholars.
25. As with article counts, these years of activity are minimums, since the article counts are conservative. Crenshaw, for example, started researching terrorism in the 1960s, but is counted as "beginning" terrorism research in 1972, the year of her first publication with the word "terrorism" in the title.
26. Analysis of the articles published in late 2001 indicates that most of these articles were indeed about the attacks of September 11.
27. Nina Silove, "The Pivot before the Pivot: US Strategy to Preserve the Power Balance in Asia," *International Security* 40, no. 4 (2016): 45–88.
28. These terms were searched in Web of Science: terrorism or terrorist; insurgency or insurgent; radicalization or radicalisation; and violent extremism or CVE.
29. Astrid Bötticher, "Towards Academic Consensus Definitions of Radicalism and Extremism," *Perspectives on Terrorism* 11, no. 4 (2017): 73–77; and Arun Kundnani, "Radicalisation: The Journey of a Concept," *Race & Class* 54, no. 2 (2012): 3–25.
30. See for example: United States. 2010. *The National Security Strategy of the United States*. May. Washington D.C. https://obamawhitehouse.archives.gov/sites/default/files/rss_viewer/national_security_strategy.pdf. On definitional differences between terrorism and violent extremism, see Alex P. Schmid, "Violent and Non-Violent Extremism: Two Sides of the Same Coin," *ICCT Research Paper* (2014): 1–29.
31. If the search for terrorism articles included these additional terms, it seems likely that most patterns reported in the paper would remain the same—especially since these terms did not result in many hits until 2010 or 2015. The main findings, the changes immediately after 9/11, would remain. Two differences would be that the 2015–2018 ISIS spike would probably be higher, and the decline shown in 2019 would not be as strong.
32. Terrorism data is from the Global Terrorism Database. See Gary LaFree and Laura Dugan, "Introducing the Global Terrorism Database," *Terrorism and Political Violence* 19, no. 2 (2007): 181–204. If global terrorism *deaths* are used, the trend is similar.
33. Cullen S. Hendrix and Jon Vreede, "U.S. Dominance in International Relations and Security Scholarship in Leading Journals," *Journal of Global Security Studies* 4, no. 3 (2019): 310–20; and J. Ann Tickner, "Dealing with Difference: Problems and Possibilities for Dialogue in International Relations," *Millennium* 39, no. 3 (2011): 607–18.
34. "Increased interest" could refer to individual researchers, who decided to start working on the topic. However, there was also increased institutional, such as governmental, interest in terrorism after 9/11. This resulted in government researchers conducting a great deal of terrorism research. For example, a cluster of researchers in the New York City Department of Health and Mental Hygiene published many terrorism articles, usually on health effects of terrorism, after 9/11.
35. See Genevieve J. Knezo, 2003, "Homeland security and counterterrorism research and development: Funding, organization, and oversight." Library of Congress, Washington D.C., Congressional Research Service; and Margaret A. Zahn and Kevin J. Strom, "Terrorism and the Federal Social Science Research Agenda," *Sociology of Crime, Law and Deviance* 5 (2004): 111–28.
36. *Ibid*., and John F. Sargent Jr., 2010. "Federal Research and Development Funding: FY2010. Library of Congress, Washington D.C., Congressional Research Service. January 12; Kenzo, Genevieve J. 2006. "Homeland Security Research and Development Funding, Organization, and Oversight." Library of Congress, Washington D.C., Congressional Research Service. August 22.
37. For example, the U.S. Department of Defense research and development was approximately $60 billion each year from the late 1990s through 2001, but surged to over $70 billion in 2002. See the data from the American Association for the Advancement of Science: https://www.aaas.org/programs/r-d-budget-and-policy/historical-trends-federal-rd. The Department of Justice's research agency, the National Institute of Justice, indicates that is has been funding terrorism research "since 2002." This suggests 9/11 was turning point for this department as well. See: https://nij.ojp.gov/topics/articles/research-domestic-radicalization-and-terrorism.
38. Funding data is from the American Association for the Advancement of Science: https://www.aaas.org/programs/r-d-budget-and-policy/historical-trends-federal-rd. This section also focuses on DHS because other departments fund research on a broad variety of topics beyond terrorism—such as the Department of Defense

funding research on inter-state conflict, and the Department of Justice financing research on common crime. It is unclear that public data on terrorism research funding by these agencies is available.

39. Values refer to constant fiscal year 2020 dollars. See the previous note for source.
40. On the one hand, the component agencies of DHS (Coast Guard, Customs and Border Protection, etc.) existed before 9/11, so their aggregate research budget was not zero. On the other hand, none of the agencies had the prioritization of terrorism mission that they all collectively gained once joined together, so one could say the budget for terrorism research and development from DHS component agencies was close to zero before 9/11.
41. The journals and their starting years come from Schuurman 2020, which describes them as "nine leading journals of terrorism."
42. Schuurman 2020.
43. Both published four issues per year up to 2000, but *SCT* started publishing six issues in 2001, and then eight in 2006, and has published 12 issues per year since 2007. *TPV* shifted from four to five issues in 2010, then published six in 2017, and eight issues in 2020.
44. Walter Enders and Todd Sandler, *The Political Economy of Terrorism*, 2nd ed. (Cambridge: Cambridge University Press, 2012), 3.
45. The percentage drops to 0 in one year, 1992. The count of terrorism articles is conservative, and should be seen as a lower bound. There are also issues with sources in early decades. For example, *Terrorism and Political Violence* was not indexed in Web of Science until 1995, so its articles do not appear in the data until that year. This makes the high percentages of the 1980s all the more remarkable.
46. A Google Scholar search for the phrase "economic consequences of terrorism" in quotations produces only one result for pre-2001 years. After 2001, there are more than 1,000 results for the phrase.
47. On psychological causes, during these years, see: John Horgan, "From Profiles to Pathways and Roots to Routes: Perspectives from Psychology on Radicalization into Terrorism," *The ANNALS of the American Academy of Political and Social Science* 618, no. 1 (2008): 80–94; Jerrold M. Post, "When Hatred is Bred in the Bone: Psycho-Cultural Foundations of Contemporary Terrorism," *Political Psychology* 26, no. 4 (2005): 615–36. On consequences, see Betty J. Pfefferbaum, "Psychological Impact of Terrorism on Children and Families in the United States," *Journal of Aggression, Maltreatment & Trauma* 9, no. 3–4 (2005): 305–17; Andrew Silke, "Terrorism, 9/11 and Psychology," *The Psychologist* (2004); Steven M. Silver, "EMDR Therapy Following the 9/11 Terrorist Attacks: A Community-Based Intervention Project in New York City," *International Journal of Stress Management* 12, no. 1 (2005): 29; and Jonas Waizer, "Community-Based Interventions in New York City after 9/11: A Provider's Perspective," *Journal of Aggression, Maltreatment & Trauma* 10, no. 1–2 (2005): 499–512.
48. For example, see James G. Cushman, H. Leon Pachter, and Howard L. Beaton, "Two New York City Hospitals' Surgical Response to the September 11, 2001, Terrorist Attack in New York City," *Journal of Trauma and Acute Care Surgery* 54, no. 1 (2003): 147–55; and Charles DiMaggio, "The Mental Health Consequences of Terrorism: Implications for Emergency Medicine Practitioners." *The Journal of Emergency Medicine* 35, no. 2 (2008): 139–47.
49. See Gordon 2010 above.
50. On the economics literature on terrorism, see Khusrav Gaibulloev and Todd Sandler, "What We Have Learned about Terrorism Since 9/11," *Journal of Economic Literature* 57, no. 2 (2019): 275–328; and Todd Sandler, "The Analytical Study of Terrorism: Taking Stock," *Journal of Peace Research* 51, no. 2 (2014): 257–71.
51. For example, women made up about 20 percent of terrorism scholars in 2004, but nearly 30 percent in 2014.
52. See American Political Science Association. 2011. *Political Science in the 21st Century* https://www.apsanet.org/portals/54/Files/Task%20Force%20Reports/TF_21st%20Century_AllPgs_webres90.pdf. I thank Erin McGrath at APSA for sharing more detailed data.
53. American Psychological Association Center for Workforce Studies. 2014. "How is the gender composition of faculty in graduate psychology departments changing?" https://www.apa.org/monitor/2014/10/datapoint.
54. Of course there were prominent female scholars publishing on terrorism before 9/11, including Martha Crenshaw, Betty Pfefferbaum, and Jessica Stern. But it is unclear that there was a critical mass, a substantial network, since women made up such a small percentage of terrorism scholars. The influx of female scholars after 9/11 could have created a situation that better fostered further increases in female participation.
55. See Silke 2007 above.
56. Gomes, José ANF, and Elizabeth S. Vieira, "How to Improve the Citation Impact of a Paper: Choice of Journal, Co-authors and Institutional Addresses.0" *Proceedings of ISSI*. 2009; Basil P. Tucker, Lee D. Parker, and Kenneth A. Merchant, "With a Little Help from our Friends: An Empirical Investigation of Co-Authoring in Accounting Research," *The British Accounting Review* 48, no. 2 (2016): 185–205.
57. Another factor likely to be important is larger team of authors due to increased funding, including grants requiring multiple authors.
58. Fran M. Collyer, "Global Patterns in the Publishing of Academic Knowledge: Global North, Global South," *Current Sociology* 66, no. 1 (2018): 56–73; and Mwazvita T. B. Dalu, "Owning the Lake, Not Just the Rod: The Continuing Challenge of the Old Boys' in Knowledge Production," *South African Journal of Science* 114, no. 7–8 (2018): 11–12.

59. Uchenna Efobi and Simplice Asongu, "Terrorism and Capital Flight from Africa," *International Economics* 148 (2016): 81–94; Maria Josua, "What Drives Diffusion? Anti-Terrorism Legislation in the Arab Middle East and North Africa," *Journal of Global Security Studies* (2020); Karthika Sasikumar, "State Agency in the Time of the Global War on Terror: India and the Counter-Terrorism Regime," *Review of International Studies* (2010): 615–38; and Beth Elise Whitaker, "Exporting the Patriot Act? Democracy and the 'War on Terror'in the Third World," *Third World Quarterly* 28, no. 5 (2007): 1017–32.
60. Tobias Heinrich, Carla Martinez Machain, and Jared Oestman. "Does Counterterrorism Militarize Foreign Aid? Evidence from Sub-Saharan Africa," *Journal of Peace Research* 54, no. 4 (2017): 527–41.
61. Muhammad Feyyaz, "The Discourse and Study of Terrorism in Decolonised States: The Case of Pakistan," *Critical Studies on Terrorism* 9, no. 3 (2016): 455–77; Tianru Guan and Tianyang Liu, "Polarised Security: How do Chinese Netizens Respond to the Securitisation of Terrorism?" *Asian Studies Review* 44, no. 2 (2020): 335–54; Richard Jackson, "The Epistemological Crisis of Counterterrorism," *Critical Studies on Terrorism* 8, no. 1 (2015): 33–54. However, also see: Harmonie Toros, "'9/11 is Alive and Well' or How Critical Terrorism Studies has Sustained the 9/11 Narrative," *Critical Studies on Terrorism* 10, no. 2 (2017): 203–19.
62. Amber Gayle Thalmayer, Cecilia Toscanelli, and Jeffrey Jensen Arnett, "The Neglected 95 Percent Revisited: Is American Psychology Becoming Less American?" *American Psychologist* (2020).
63. Preliminary data through 2019 suggests the decline continues.
64. Evelyn Goh, "US Dominance and American Bias in International Relations Scholarship: A View from the Outside," *Journal of Global Security Studies* 4, no. 3 (2019): 402–10; and Liang Zhang, Justin J. W. Powell, and David P. Baker, "Exponential Growth and the Shifting Global Center of Gravity of Science Production, 1900–2011," *Change: The Magazine of Higher Learning* 47, no. 4 (2015): 46–49.
65. See Silke 2004 and Schuurman 2020 above.
66. Paul A. Djupe, Amy Erica Smith, and Anand Edward Sokhey, "Explaining Gender in the Journals: How Submission Practices Affect Publication Patterns in Political Science," *PS: Political Science & Politics* 52, no. 1 (2019): 71–77; Lisa Geraci, Steve Balsis, and Alexander J. Busch Busch, "Gender and the H Index in Psychology," *Scientometrics* 105, no. 3 (2015): 2023–34; and Gudrun Østby, "Gender Gap or Gender Bias in Peace Research? Publication Patterns and Citation Rates for Journal of Peace Research, 1983–2008," *International Studies Perspectives* 14, no. 4 (2013): 493–506.
67. For example: Mia Bloom, *Bombshell: Women and Terrorism* (University of Pennsylvania Press, 2011); Karla J. Cunningham, "Cross-Regional Trends in Female Terrorism," *Studies in Conflict and Terrorism* 26, no. 3 (2003): 171–95; Jessica Davis, *Women in Modern Terrorism: From Liberation Wars to Global Jihad and the Islamic State* (Rowman & Littlefield, 2017); and Margaret Gonzalez-Perez, *Women and Terrorism: Female Activity in Domestic and International Terror Groups* (Routledge, 2008).
68. See note 15 above.
69. The data will be available at the author's personal website.
70. See Reid and Chen 2007 above.