

## II. Resources

### The Art of Searching: How to Find Terrorism Literature in the Digital Age

by Judith Tinnes

#### *Abstract*

*This guide provides an overview on information retrieval techniques for locating high-quality literature on terrorism and counter-terrorism. Starting from general considerations on conducting a literature search – taking into account the specifics of terrorism studies – instructions are provided on how to find particular literature types by using different search methods and information retrieval systems, followed by information on how to refine a search by employing focused search strategies. The explanations are enriched with numerous links to recommendable resources. The included examples are focused on terrorism studies, but the general search mechanics can be applied to other research domains as well.*

#### *The Internet – A World Library?*

The Internet is sometimes called a world library, which has rendered research support organisations (including the traditional library) superfluous. For scholarly communication the “network of networks” is undoubtedly the most important innovation since Johannes Gutenberg invented the printing press in 1450. Its advantages are obvious: It is accessible at any time from everywhere, can be used quickly and easily, allows flexible kinds of interaction with information (for example, reading texts online, saving and printing documents, copying and pasting excerpts) and even enables users to produce their own content, be it textual or multimedia, independently of the selection thresholds of commercial publishers – thus creating an “information democracy”.

However, in spite of all these valuable benefits, the disadvantages of the Internet must not be ignored, especially by serious researchers who require high-quality, objective, and reliable information. The efficiency of online retrieval is restricted by information overload, irrelevant ballast, and quality differences leading to imprecise or invalid search results. Moreover, the bulk of web content is technically unreachable by search engine crawlers (so-called Deep Web content[1]). Free and commercial resources are mixed, the latter often employing complex, opaque license models. All these characteristics are the very opposite of the attributes typically found at a traditional research support facility.

Information professionals offer services to optimise information retrieval by evaluating, selecting, acquiring, organising, and providing resources for their patrons. If they do not have the information themselves, they point people to good material that is housed elsewhere.[2] With their expertise, they assist users in finding information and train them in using retrieval systems.

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Precisely because the quickly expanding Internet content “is rather disorganized, and any mechanism to make sense of it is welcome”[3], research support today is more important than ever – users need the assistance of an “expert intermediary”[4] to meet their information needs. This added value, which presupposes sophisticated intellectual work, is the main difference to consider when comparing materials provided by research support organisations to those presented by full-text search engines. While the former are selected and manually indexed by information specialists – i.e. humans – the latter are automatically collected and indexed by search engines – i.e. machines that cannot compete with the intellectual skills of the human mind. On the other hand, only the data processing capacity of search engines can (at a rudimentary level) cope with the quickly growing amount of full-text and multimedia items on the web. The conclusion of these considerations is simple: A search will only be successful if one uses **both** machine-indexed and human-indexed materials rather than relying exclusively on a single type of materials. The same is true for particular search methods and retrieval systems: Each of them, as Thomas Mann observes:

*has distinct advantages and disadvantages (both strengths and weaknesses); and each is capable of turning up information that cannot be reached by the other [ones]. Information that lies in a blind spot to any one method of searching, however, usually lies within the purview of one or more of the other means of inquiry.[5]*

Consequently, if researchers want to master the art of searching, they have to know which search method(s) and retrieval system(s) are best suited for their particular research purpose.

This guide provides an overview of information retrieval techniques for locating high-quality literature on terrorism and counter-terrorism. Starting from general considerations on conducting a literature search – taking into account the specifics of terrorism studies – instructions are provided on how to find particular literature types by using different search methods and information retrieval systems, followed by information on how to refine a search by employing focused search strategies. The explanations are enriched with numerous links to recommendable resources. The included examples are focused on terrorism studies, but the general search mechanics can be applied to other research domains as well.

### *General Considerations on Literature Search*

#### *The Specifics of Terrorism Literature*

Every research field has its own specific attributes that influence its literature landscape and also the way to search for literature. Important aspects of the terrorism literature corpus include the following:

- *9/11 has been a trigger event for terrorism research.* Though the roots of terrorism research precede 9/11 by many decades, the attacks on the U.S. have caused many
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conflict scholars and academics from a variety of disciplines to shift their attention toward understanding the causes and consequences of terrorism. As Young and Findley noted, “The amount of research on terrorism being published in political science journals has doubled several times over what it was pre-9/11.”[6]

- *Terrorism is an interdisciplinary subject but not an independent discipline.* Though terrorism has numerous facets and affects many aspects of human life, it has not yet been established as an independent academic discipline.
- *Terrorism research is often conducted by one-time or transient researchers.* These researchers contribute only a single study or a small amount of studies during one or two years and then move on to other research fields. Only a small core of researchers is committed to the field and publishes continuously over a larger time period.[7]
- *Terrorism has a large research periphery.* Terrorism literature is characterized by a massive dispersion across multiple academic disciplines. While there are a few journals (like *Perspectives on Terrorism*) that focus exclusively on this area of research, most contributions are published in the periphery of the field; that is, in publication outlets that belong to other disciplines and that once in a while publish a single or a few article(s) on terrorism.[8]
- *Terrorism is a highly subjective topic.* “Terrorism” is not a neutral but pejoratively charged term which makes it challenging to find unbiased information. The information realm of the media (and the Internet in particular) has turned into a battlefield where opponents spread misinformation and propaganda mixed with credible information.

Hence, when searching for literature, terrorism researchers are confronted with a fast growing body of mainly interdisciplinary publications scattered over a large number of publication outlets and written by irregular contributors to the field. Compared to traditional disciplines with established publication outlets and a core authorship, in terrorism research the possibility of missing important contributions is considerably higher. Moreover, the evaluation of the literature needs extra efforts to filter out biased resources.[9] Locating high-quality terrorism literature is therefore an important aspect of conducting terrorism research and is “by no means a simple intellectual operation. [...] It involves complicated acts of evaluation and decision making”[10] and should thus not be treated as a negligible low-level mental activity.

### *Hermeneutic Approach*

Sebastian Boell and Dubravka Cecez-Kecmanovic propose a hermeneutic approach towards literature reviews, illustrating how developing an understanding of a relevant body of literature is not a linear process but circular in nature. Engagement with the literature deepens understanding

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and influences the way every new publication is interpreted – for example, researchers are becoming more familiar with specialized terms, research approaches, and names of core authors and publication outlets. This process helps them to improve subsequent search operations. Therefore, it is not advisable to identify all relevant literature on a subject in a first step and engage with the literature in a subsequent step. Researchers should rather start a literature search with locating a small set of highly relevant resources (instead of huge sets of documents whose relevance cannot be sufficiently judged) and read them, then return to search, go on with reading the next set of documents, and iterate these activities until a point of saturation is reached.[11]

### *Build Up Your Own Research Tool Box*

Regular contributors to the field are strongly advised to build up a collection of useful core and peripheral sources for literature retrieval as this effort will pay off as a time saver and helps to avoid missing important content. In 1934, British librarian Samuel C. Bradford formulated a bibliometric law describing the distribution of papers on a specific subject in scientific periodicals. According to Bradford's law of scattering, “there are a few very productive sources, a larger number of sources which give moderate production, and a still larger number of [items with] constantly diminishing productivity.”[12] This means that during a literature search, many relevant publications will be scattered over a vast amount of peripheral publication outlets. Such is the case with the diverse array of terrorism research sources, as noted above.

At the beginning of the literature retrieval process, researchers should at first identify the core sources of the field (journals, institutions, conferences, etc.). According to Avishag Gordon, a core journal “is dedicated to the central themes of the specific scientific field. It carries the name of the field in its title (in most cases).”[13] This definition can be expanded to non-journal sources, such as governmental or non-governmental institutions that regularly publish relevant materials, e.g., the [Combating Terrorism Center \(CTC\)](#) or the [International Institute for Counter-Terrorism \(ICT\)](#). As core sources account for a high percentage of relevant literature, it is advisable to regularly hand-check them (i.e., browsing the table of contents of core journals or visiting the publications sections of institution homepages) in order to avoid missing important content.

If one bears Bradford's law of scattering in mind, it becomes evident that it is not sufficient to rely exclusively on core sources, as by ignoring peripheral sources, one will exclude many important materials. Gordon defines a peripheral journal as a “journal that occasionally publishes articles about terrorism but is dedicated mostly to another field of study.”[14] As the relevance of peripheral sources is often not discernible at first sight, it requires considerable effort to identify them. Methods for locating core and peripheral sources are described below.

### *Searching for Terrorism Literature*

#### *Secondary Literature*

Researchers who start engaging with a new subject should initially focus their search on secondary literature. This publication type does not contain original research but synthesizes, analyses, or reviews original research contributions.

A good entry point into a subject is an encyclopedia. Encyclopedia articles give a broad overview of the established knowledge on a topic, provide background information, outline the most important facts, and list selected references to highly relevant literature. Usually, subject encyclopedias are better suited than general encyclopedias because they are written by experts in the field, are focused, and provide more details. Encyclopedias are often published in print-form by renowned publishers, undergo rigorous editorial control, and can therefore be considered authoritative high-quality information sources. To retrieve encyclopedias, researchers should use databases focusing on reference works. Examples are: [Reference Universe](#), [Credo Reference](#), or [Guide to Reference](#).

Handbooks convey similar information as encyclopedias but with a stronger emphasis on practice, procedures, and other “how to” directions to provide “actionable” rather than theoretical knowledge. They are concisely written to enable readers to quickly find answers in field situations. [15] Both encyclopedias and handbooks are written for non-specialists.

Textbooks are designed for educational purposes. They provide a foundation for the understanding of a particular topic (including a historical outline). Thematically, textbooks are organised in short units adaptable to teaching lessons. The content of each unit is prepared didactically, and often an instructor’s resource guide is provided.

Examples of encyclopedias, handbooks, and textbooks on terrorism include:

- Alex P. Schmid (Ed.) (2011): *The Routledge Handbook of Terrorism Research*. New York: Routledge.
  - C. Gus Martin (Ed.) (2011): *The SAGE Encyclopedia of Terrorism*. (2nd ed.). Thousand Oaks: SAGE.
  - Edward F. Mickolus; Susan L. Simmons (2011): *The Terrorist List*. (Vol. 1-5). Santa Barbara: Praeger Security International.
  - James Ciment (Ed.) (2011): *World Terrorism: An Encyclopedia of Political Violence from Ancient Times to the Post-9/11 Era*. Armonk: M. E. Sharpe.
  - James J. F. Forest (2012): *The Terrorism Lectures*. Santa Ana: Nortia Press.
  - James J. F. Forest; Russell D. Howard (Eds.) (2012): *Weapons of Mass Destruction and Terrorism*. (2nd ed.) New York: McGraw-Hill.
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- Russell D. Howard; Bruce Hoffman (Eds.) (2011): *Terrorism and Counterterrorism: Understanding the New Security Environment, Readings and Interpretations*. (4th ed.). New York: McGraw-Hill.

Review articles (not to be confused with book reviews) provide a state-of-the-art overview on a particular subject. As they typically explore a large amount of relevant literature, they are more exhaustive than encyclopedia or handbook articles and their reference list is more comprehensive than selective. Literature reviews provide orientation into an area, introduce specific terms, concepts, and research streams and their relationship to each other, point out shortcomings in earlier research, and highlight research desiderata.[16] “Literature reviews are also valuable in light of the knowledge explosion and the consequent impossibility of reading everything.”[17] They often address readers who already have a basic knowledge on a subject. Literature reviews can either be found as a separate literature type or as parts of other publications (literally, every primary research article or doctoral thesis contains a review section). Frequently, academic journals have dedicated sections for literature reviews.

Bibliographies are a true gold mine for literature retrieval. Often, they are manually compiled by information specialists or renowned experts in the field, who conduct the laborious work of retrieving, evaluating, and selecting relevant resources on a particular subject from widely scattered (including less-known) sources. The main advantage of bibliographies is to save researchers the trouble of reinventing the wheel by providing them with a one-stop overview listing of sources already determined to be relevant.[18] Bibliographies are published in print or in electronic format. In the latter case, researchers should carefully assess the individual(s) who compiled a bibliography to obtain clues on the reliability and objectivity of its contents. *Perspectives on Terrorism* regularly publishes bibliographies on different terrorism topics (see the Appendix for a content listing). The Terrorism Research Initiative (TRI) maintains an extensive resource portal named “[Teaching About Terrorism](#)”. Part of the collection is the “[Terrorism and Counterterrorism](#)” bibliography produced by faculty and researchers of the Combating Terrorism Center. Also, researchers can retrieve bibliographies on expert homepages; see for example Christian Bleuer's “[Afghanistan Analyst Conflict Bibliography](#)” or Aaron Y. Zelin's “[Jihadi Studies Bibliography](#)”, as well as his “[End of the Year](#)” and “[Articles of the Week](#)” series on his blog *Jihadology*.

Secondary sources are easy to identify because they often carry terms for their function in the title (e.g., “encyclopedia”, “bibliography”, “references”, “resources”, “handbook”, “review”). Therefore, using such terms in a keyword search in library catalogues, databases, or search engines combined with keywords or phrases for the subject of interest (e.g., “terrorism”, “political violence”, or “suicide attacks”) may deliver satisfactory results. Subject headings in library catalogues (e.g., the [Library of Congress Subject Headings, LCSH](#)) or field search operations in

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full-text or reference databases (such as [Web of Science](#), or [EBSCO Academic Search Complete](#)) are particularly helpful to narrow a search to specific literature types.

### *Citation Search*

After having identified a set of highly relevant resources, it is advisable to scan the reference lists of these publications to retrieve further records. This retrieval method – often called “snowballing” – enables researchers to find relevant literature more quickly and easily than by most other retrieval strategies. Usually, being cited by the author of a core resource is a seal of quality for a publication: The author credits the resource he/she deemed valuable by citing it. However, researchers should always check the context in which a resource is cited, as a publication might also have been quoted to rebut its main hypothesis or to question its methodology. Moreover, researchers should keep in mind that the resources they identify by snowballing cannot be more recent than the article citing them (i.e. are inherently older).

Citation searching, the mirror-image of snowballing, is the method of choice to search for cited references forward in time, to subsequent publications.[19] It allows researchers to identify resources that have cited a particular publication and can therefore be useful to track the scholarly discussion on a specific topic. The two most widely used citation databases are [Web of Science](#) (Thomson Reuters / ISI) and [Scopus](#) (Elsevier). Citation search (and snowballing as well) have a central advantage over term-based search methods: As their basis is a particular citation, researchers do not have to specify search terms and therefore do not run the risk of missing important content due to the use of unsuited search vocabulary. Citation databases are currently limited to journal articles. Other literature types, such as books or reports, are not covered. Another shortcoming is the bias of citation databases: The major providers prefer internationally-focused subscription-based journals from English-speaking countries in North America, Western Europe, and Australia, and ignore the bulk of other-language journals with a more regional scope. Open-access journals are underrepresented as well. For example, though it is the most-read journal in the field, *Perspectives on Terrorism* is presently not indexed by Web of Science.

A very useful source for identifying core resources in a particular research domain is a citation analysis, i.e. a study that examines the patterns and frequency of citations in a specific field. In terrorism research, examples of citation analyses include:

- Avishag Gordon (2005, March): The Peripheral Terrorism Literature: Bringing it Closer to the Core. *Scientometrics*, 62(3), pp. 403-414. DOI: <http://dx.doi.org/10.1007/s11192-005-0030-8> and Avishag Gordon (2007, August): Transient and Continuant Authors in a Research Field: The Case of Terrorism. *Scientometrics*, 72(2), pp. 213-224. DOI: <http://dx.doi.org/10.1007/s11192-007-1714-z>
- Daryl R. Bullis; Richard D. Irving (2013, March): Journals Supporting Terrorism Research: Identification and Investigation into their Impact on the Social Sciences.

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*College & Research Libraries*, 74(2), pp. 119-129. URL: <http://crl.acrl.org/content/74/2/119.abstract>

- Edna F. Reid; Hsinchun Chen (2007, January): Mapping the Contemporary Terrorism Research Domain. *International Journal of Human-Computer Studies*, 65(1), pp. 42-56. DOI: <http://dx.doi.org/10.1016/j.ijhcs.2006.08.006> URL: <http://ai.arizona.edu/intranet/papers/paper-Reid-terrorism-researcher.pdf>

Snowballing, citation searching, and citation analyses help researchers to identify the core authors of a field. Based on this knowledge, they should extend their search to publication lists of highly influential and productive authors to locate further relevant records.

### *Journals*

Presently, peer-reviewed academic journals are the most important vehicle for scholarly communication. Since the beginning of scholarship, their numbers have increased from a handful to more than 26,700[20] making it nearly impossible to maintain a comprehensive account of the relevant periodicals in a particular field. Due to the short turnaround times for journal manuscripts, journal articles are predestinated to convey up-to-date information, meeting the needs of very dynamic research fields – like terrorism studies. Most peer-reviewed articles are published in subscription-based journals that hide their contents behind a pay-wall locking out readers whose institutions cannot afford the expensive licensing fees or who are not affiliated with an academic institution.[21]

The open-access (OA) movement tries to overcome this grievance by encouraging and facilitating free access to scholarly information.[22] OA can be subdivided into Green and Gold OA: The former model allows authors to publish their article in a subscription-based journal, but additionally requires them to self-archive it in a freely accessible institutional repository or on their homepage.[23] However, the free version is often not identical to the officially published article, as many publishers only allow self-archiving of preliminary versions of an article (e.g., before peer-review). This may confuse readers about which version is the official one; additionally, the preliminary versions are often not suited for citation purposes. Some publishers permit self-archiving only after a temporal delay, a so-called embargo, usually ranging from several months up to six years. In contrast, the Gold OA model requests that scholars publish their article in an OA journal, a journal that makes all of its contents immediately accessible to its readers at no cost. Though increasing, the percentage of OA articles is currently relatively low (36% in the social sciences, with only 1% of it Gold OA).[24]

OA publishing is sometimes associated with low-quality content. However, numerous OA journals apply the same rigorous quality control measures as their subscription-based cousins. To evaluate the quality of an OA journal, researchers should consult the “About” section of the particular journal. Existence of a peer-review procedure (ideally by external reviewers), an

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editorial board comprised of members from countries all over the world, and a regular publication schedule are indicators of a quality academic periodical.

There are many ways to locate relevant journals in a field. As every retrieval system is limited in its coverage, researchers are recommended to always use multiple systems for their literature search. A convenient tool to identify relevant publications are journal bibliographies compiled by experts. Examples of journal bibliographies include:

- Charles Jones et al. (2010-): *Access to Mideast and Islamic Resources (AMIR)*. URL: <http://amirmideast.blogspot.de>
- Judith Tinnes (2013, April): 100 Core and Periphery Journals for Terrorism Research. *Perspectives on Terrorism*, 7(2), pp. 95-103. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/258>

Serials directories comprise thousands of bibliographic records of peer-reviewed journals and other periodicals in print and electronic format. Usually, they can either be browsed by subject and alphabetical categories or be keyword-searched. See for example [Ulrichsweb](#) (subscription via ProQuest) or the [Electronic Journals Library](#) (free; run by the University of Regensburg, Germany). The [Directory of Open Access Journals \(DOAJ\)](#) currently indexes more than 9,400 OA journals, roughly half of them are searchable at article level. [Journal TOC](#) is the largest free collection of scholarly journal tables of contents. It indexes more than 22,000 journals (including around 5,700 OA journals) from 1795 publishers. Users can search the collection for journals and journal articles. [JSTOR](#) is a subscription-based digital library comprising the archives of more than 1,900 journals, dating back to the first volume ever published. It is searchable at title and article level. A recommendable print source is [The Standard Periodical Directory](#).

Database publishers provide coverage lists detailing which sources are indexed for a particular product. These lists can usually be browsed alphabetically and/or by subject categories. Examples for coverage lists are the Thomson Reuters / ISI [Master Journal List](#) or the content lists of EBSCO's [International Security & Counter-Terrorism Reference Center \(ISCTRC\)](#).

Snowballing, citation searching, and citation analyses are useful tools to retrieve relevant journals as well. Researchers should pay attention to titles that they repeatedly encounter in reference lists of various relevant articles, as redundancy indicates the importance of a journal for a particular field.

Another way to locate relevant journals is searching publisher homepages. Examples for publishing houses supporting terrorism studies are [Cambridge Journals](#), [De Gruyter](#), [Elsevier](#), [IOS Press](#), [NOVA Publishers](#), [Palgrave Macmillan](#), [SAGE](#), [Springer](#), [Taylor & Francis](#), and [Wiley](#). Often, publishers provide readers with the possibility to be alerted when a new journal, issue, or article by a specific author or on a specific (sub-)topic in their field of interest becomes available.

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To identify periphery journals, researchers are advised to keyword-search periodicals to evaluate their relevance. For example, if a search for the keyword “terrorism” reproduces hundreds of results, the journal is probably relevant, while only a handful of results indicate that terrorism is rather not in the scope of this publication. However, when applying this method, one must set the amount of returned results in relation to the total content volume of a journal – a recently established journal will hardly produce a large number of results.

Finally, researchers are recommended to monitor websites that introduce new journals; two of them are [NewJour](#) and [La Criée](#).

### *Grey Literature*

The term “grey literature” refers to non-conventional, informally published materials (e.g., e-books, reports, working papers, white papers, research briefs, fact sheets, or maps). Grey literature is produced by a broad spectrum of actors in the field, including academic, governmental, and private institutes, organisations, companies, and individual experts. To retrieve this type of literature, extra efforts are required as it is “neglected by most library catalogs and databases” [26], rarely advertised or marketed by its producers, and frequently hidden in the Deep Web and thus unreachable to search engines. Besides, grey literature often lacks bibliographical standards, meaning that basic reference information such as author name(s), publication date, or publishing body may be difficult to identify. However, engaging in extra retrieval efforts will pay off, because grey literature is an invaluable source of information. It encompasses a broad range and variety of materials. Many of the publications are original, covering topics in a thorough, in-depth fashion, often surpassing in length conventional journal articles.

Researchers are recommended to build up a collection of websites providing grey literature tailored to their specific needs. To locate publications at a particular website, researchers should search for the relevant section (often entitled “Publications”), which can be retrieved either by browsing or via the site map. A Google search with the site operator (e.g., publications site:ctc.usma.edu) may also deliver satisfactory results. There are several collections of grey literature sources on the web, saving researchers the trouble of reinventing the wheel. Examples are:

- Ben Benavides (2012, September): *Open Source Intelligence (OSINT) 2oolKit On The Go*. URL: <http://www.phibetaiota.net/wp-content/uploads/2009/07/OSINT-2ool-Kit-OnThe-Go-Bag-O-Tradecraft.pdf>
- Benjamin Freedman (2010, November): Terrorism Research Centres: 100 Institutes, Programs and Organisations in the Field of Terrorism, Counter-Terrorism, Radicalisation and Asymmetric Warfare Studies. *Perspectives on Terrorism*, 4(5), pp. 48-56. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/123>

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- Berto Jongman (2011, March): Internet Websites and Links for (Counter-)Terrorism Research. *Perspectives on Terrorism*, 5(1), pp. 22-37. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/jongman-internet-websites>
  - Judith Tinnes (2013, June): 230 Websites and Blogs for Terrorism Research. *Perspectives on Terrorism*, 7(3), pp. 84-98. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/270>

Publications produced by and for the U.S. government are provided by the U.S. Government Printing Office ([GPO](#)).

### *Dissertations*

Doctoral dissertations are a treasure trove for information retrieval. They provide extensive up-to-date information on nearly every imaginable topic. Usually, they contain a thorough literature review on the subject they cover. Doctoral theses are qualification works supervised by highly qualified academic staff and can therefore be considered valid information sources. They can be found in institutional repositories or at national libraries (such as the [U.S. Library of Congress](#), the [British Library](#), or the [German National Library](#)). Pan-national or international federated networks aggregate multiple library collections under a single interface. Examples are the [DART-Europe E-theses Portal](#) and the [Networked Digital Library of Theses and Dissertations \(NDLTD\)](#).

Commercial indexing services offer extensive collections of references, abstracts, and full-texts of doctoral theses. The most common provider is the [ProQuest Dissertations & Theses Database \(PQDT\)](#). It includes nearly 3 million searchable citations to dissertations and other theses from around the world from 1743 to the present (over 1 million titles are available as full-texts in PDF format; over 2 million can be purchased as printed copies).

### *Books*

In the field of terrorism and counter-terrorism studies, books have been underutilised in favour of journal articles or other short literature types that are more compatible to everyday working situations where tight deadlines are common<sup>[27]</sup> and up-to-date information is required. However, books provide a thorough, detailed in-depth level of knowledge that articles cannot offer. They can be distinguished into monographs and edited volumes: While the former are written by a single author or a group of authors and cover a single subject (or an aspect of it), the latter consist of several chapters written by different authors, harmonized by an editor. Each chapter covers a particular aspect of a subject ranging from general introductory to very specialized topics. Often, large multivolume edited publications offer a wealth of case studies and thematic research essays. Usually, academic publishers apply rigorous editorial control standards for submitted book manuscripts in order to secure a high-quality outcome.

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The traditional tools for book retrieval are library catalogues. The largest library catalogue to date is OCLC's [WorldCat](#). The free online service allows users to search the holdings of tens of thousands of national and international libraries simultaneously. It focuses on books, video and music CDs, and DVDs. Other extensive catalogues are the [Library of Congress Online Catalog](#) and the catalogue of the [British Library](#). Many countries maintain federated library catalogues enabling users to search many regional library collections at once; for example, in Germany, the [Karlsruher Virtueller Katalog](#) provides a one-stop interface for searching multiple federated catalogues in German-speaking countries. The powerful search can be expanded to international catalogues as well.

When using library catalogues for literature retrieval, researchers have to bear one important thing in mind: Most library catalogues focus on books and index on title rather than article level. This implies for periodicals that only the journal title is indexed but not the titles of the individual articles. To retrieve literature on article level, researchers have to rely on other sources, such as databases, academic search engines, or bibliographies. Literally, every library catalogue provides holding information. Researchers should start their book retrieval by searching the catalogue of their local library. If it does not hold a book, they should try to request a copy through inter-library-loan.

An easy-to-use book retrieval system is [Google Books](#). The free service enables users to search the full-texts of a vast amount of books from many different publishers. The amount of accessible information depends on the copyright status of a particular book as well as on the individual arrangements Google made with book publishers and some major libraries. A book search result is presented in a special interface enabling users to preview pages and sometimes the full-text of a book. Usually, the whole book can be keyword-searched (for each occurrence, text snippets are presented), while the page preview is restricted to particular parts of a book. Most publishers allow at least the display of the cover page, imprint page(s), and table of contents – making Google Books a powerful tool to verify bibliographic information and search for content details. This feature is of special importance for edited books: While libraries increasingly include a table of contents for edited volumes in their catalogue records, many edited books are still indexed at title level only. Google Books is bridging this gap. Some library catalogues such as WorldCat offer a Google Books API, allowing users to open the Google Books Preview directly from a catalogue record.

Another source for book retrieval are book reviews. Many academic journals (e.g., [Perspectives on Terrorism](#), [Terrorism and Political Violence](#), [Studies in Conflict and Terrorism](#), and [Critical Studies on Terrorism](#)) have dedicated book review sections to which they release critical evaluations of recently published books. Besides, most databases provide the option to narrow a search to this specific literature type. While most book reviews focus on a single book, some reviews cover several books at once and are therefore particularly valuable. Examples are:

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- Joshua Sinai (2008, August): Review Essay: Top 50 Books on Terrorism and Counterterrorism. *Perspectives on Terrorism*, 2(11), 15-23. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/57/118>
  - Joshua Sinai (2012, May): Terrorism Bookshelf: Top 150 Books on Terrorism and Counter-Terrorism. *Perspectives on Terrorism*, 6(2), pp. 74-116. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/sinai-terrorism-bookshelf>
  - Joshua Sinai (2013, June): Counterterrorism Bookshelf. *Perspectives on Terrorism*, 7(3), 114-124. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/272>

In the digital age, books are not only published in print but also in electronic format. Digital books (e-books) come with expanded usage capabilities (e.g., full-text search, bookmarking and highlighting features, clickable tables of contents, display of abstracts at chapter level) which allow readers to quickly mine and spot relevant information. Many publishers offer e-books in formats compatible for e-book readers (e.g., Kindle) or other mobile devices. E-books can be purchased directly from a publisher. Examples for publishing houses selling e-books on terrorism or counter-terrorism are [Cambridge University Press](#), [De Gruyter](#), [Elsevier](#), [IOS Press](#), [NOVA Publishers](#), [Palgrave Macmillan](#), [Praeger Security International](#), [SAGE](#), [Springer](#), [Taylor & Francis](#), and [Wiley](#). Some publishers release special book series on terrorism-related topics (see for example the [NATO Science for Peace and Security Series](#) by IOS Press or the [Focus on Terrorism Series](#) by Nova Publishers). Commercial content providers (e.g., [Questia](#)), offer subscription-based access to e-book collections from many different publishers. Academic libraries enable their patrons to access licensed e-book collections at no cost. Moreover, governmental and non-governmental organisations and private companies provide OA e-books on their webpages (see the previous chapter on grey literature).

### News

Terrorism research is a very dynamic field heavily influenced by contemporary political events. Therefore, researchers cannot exclusively rely on academic literature but require current information on world affairs. To stay informed they have to monitor the news. News are produced by a variety of outlets. However, finding reliable news is a challenging task because the information realm of the digital age has turned into a battlefield. In an internal letter dated 2005, Ayman al-Zawahiri wrote to Abu Musab al-Zarqawi: “I say to you: that we are in a battle, and that more than half of this battle is taking place in the battlefield of the media.”[28] Terrorists and their opponents publish biased accounts of events to support their cause. Hence, terrorism researchers should never rely on a single news outlet but always cross-check information over a broader range of sources to verify it.

Researchers are advised to build up a bookmark collection of handpicked trustworthy news sources tailored to their specific needs. This collection should not only comprise links to websites of major news networks, newswires, newspapers, or broadcasters (like [Reuters](#), [The New York Times](#), [The Christian Science Monitor](#), [BBC](#), or [CNN](#)), but should also consider outlets relevant to specific research purposes, e.g., if one tracks a hostage taking in Pakistan, it is recommendable to not only rely on sources from the Western hemisphere but also on regional outlets (such as [Dawn](#), [The Express Tribune](#), or [GEO TV](#)). Many national or regional non-English news sources provide a (though often limited) English version of their content (see for example the German news magazine [Der Spiegel](#) or the Panarabian newspaper [Asharq Al-Awsat](#)).

A popular tool for news retrieval is [Google News](#). The machine-indexed news site aggregates news from several thousand news sources worldwide (including blogs), groups news stories by category, offers personalization features (most importantly: an alert service), and a variety of search options (such as date filtering). News Resource Guides (such as [Kidon Media-Link](#) and [ABYZ News Links](#)) compile a broad spectrum of news outlets around the world. Commercial vendors provide fee-based access to news databases containing full-texts of hundreds of different newspapers. These collections can be keyword-searched and are customizable (e.g., with regards to a particular topic). Examples are [ProQuest](#), [Factiva](#) (Dow Jones), and [Nexis](#) (LexisNexis). Some providers, e.g., the [World News Connection](#), offer translations of international news items from many different newspapers and broadcasting stations. Usually, academic libraries have licensed one or more subscription-based news service(s) that can be freely accessed by their patrons. Private companies in the field of terrorism research offer subscription-based specialized news services. Examples are [IHS Jane's](#), the [SITE Intelligence Group](#), and the [Middle East Research Institute \(MEMRI\)](#). There are also several OA news services specializing in terrorism and security news, such as [Homeland Security News](#) (The National Terror Alert Response Center) and [Terrorism News](#) (Maryland Coordination and Analysis Center). Most news outlets, database providers, and libraries offer customizable e-mail or RSS alert features, notifying readers when a new article in their field of interest becomes available.

### *Blogs*

Focusing on topics of very specialized interests and being updated in short intervals, blogs are a priceless source for topical and thematic information. They can be considered a main pillar of “citizen journalism”: Offering people with no professional journalistic education a platform to share their knowledge and personal views, they constitute a counter-weight to the mainstream media. The quality of blog contents is very diverse ranging from well-founded commentaries and primary source analyses by academics and professional experts to unqualified hate speech by laymen. While the blog format is also employed by governmental or non-governmental institutions, news outlets, or other corporate entities, most blogs are maintained by a single or a few private person(s).

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Many terrorism research blogs publish well-founded analyses of primary source materials (e.g., statements, video, and audio publications by terrorist organisations), point to news sources or expert literature, and also provide links to additional relevant websites (so-called “Blogroll”). This information aggregation function makes them the tool of choice for keeping informed on particular (sub)topics. Several bloggers in the field run accompanying Twitter accounts where they tweet news headlines and information on newly released publications by terrorist and counter-terrorist organisations, enabling readers to track events in almost real-time. The intertwined, multidirectional communication structure of the Blogosphere (comment/retweet options, voting features, etc.) can be very valuable to follow scholarly and professional discussions between terrorism experts.

There are several highly recommendable blogs in the field of terrorism research. A few examples are: [Jih@d](#), [Jihadology](#), [Views from the Occident](#), [Jihadica](#), [Threat Matrix](#) and [Abu Susu's Blog](#).

Due to the large number and quality differences, identifying reliable blogs is a challenging task. A good place to start a search is the Blogroll of expert blogs as it points readers to sources already determined to be relevant. Expert-compiled resource guides provide a broad range of hand-picked links to blogs and other informative sources, see for example:

- Berto Jongman (2011, March): Internet Websites and Links for (Counter-)Terrorism Research. *Perspectives on Terrorism*, 5(1), pp. 22-37. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/jongman-internet-websites>
- Judith Tinnes (2013, June): 230 Websites and Blogs for Terrorism Research. *Perspectives on Terrorism*, 7(3), pp. 84-98. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/270>

To expand their blog search, researchers are advised to use blog search engines such as [Google Blogs](#), [Technorati](#), [ICEROCKET](#), and the [Blog Search Engine](#). These specialized retrieval systems enable users to search indexed portions of the web for blogs and blog postings.

### *Legal Information*

Terrorism research is often intertwined with legal issues which can be very complicated especially in the case of global terrorism where jurisdictions of different countries are involved. A free search tool for legal information is Legal Scholar, a segment of Google Scholar containing legal opinions and court decisions from U.S. courts. To search Legal Scholar, researchers should go to the U.S. version of the [Google Scholar](#) website and activate the radio button next to “Legal Documents” below the search field.

A renowned commercial provider for legal information is [LexisNexis](#), offering fee-based access to different kinds of legal full-texts (focus: Anglo-American law). Many countries have governmental or commercial providers for national law information (in Germany, for example, [juris](#) is an established supplier). Free resource guides and specialized directories such as [GlobalLex](#) and the [Internet Law Library](#) offer information about the legal systems of many countries and international jurisdictions.

### *Primary Sources*

Terrorism is a communication strategy[29]. Terrorist organisations and individuals publish large amounts of texts, videos, audio files and other materials to rally people to their cause. In the digital age, they exploit the Internet as a prominent vehicle for the distribution of their materials[30]. When studying terrorism, researchers are advised to access these primary sources whenever possible instead of blindly relying on secondary sources, as these may contain only excerpts of an original publication (as is it often the case with terrorist videos broadcasted by the mainstream media), or may contain errors or misinterpretations (e.g., in the past, mainstream media outlets have repeatedly ascribed threat messages by terrorist sympathizers to “genuine” terrorist organisations).

Several expert publications regularly provide links to primary sources and well-founded analyses of primary source materials. A frequently updated publication is Aaron Y. Zelin's blog [Jihadology](#). Beyond free analyses, the site offers a fee-based translation service for Jihadist materials in multiple languages (including Arabic, Urdu, Pashto, Uzbek, and Russian). The Jihadi Websites Monitoring Group (JWVG) of the International Institute for Counter-Terrorism (ICT) provides several free Jihadi websites monitoring services: [Alerts](#), [Insights](#), and [Periodical Reviews](#). Commercial research support companies such as the [SITE Intelligence Group](#), [IntelCenter](#), [IHS Jane's](#), the [Middle East Research Institute \(MEMRI\)](#), or the [Middle East Observatory \(MEO\)](#) offer subscription-based access to large collections of primary sources (including translations) targeted at the needs of specific customer groups.

As primary sources often cross-link to other primary sources, snowballing is a fruitful method to retrieve additional terrorist propaganda outlets. Terrorist organisations usually exploit filehosters such as Uploadstation, Zippyshare, Archive.org, Bayfiles, or Rapidshare to upload their materials. Subsequently, they distribute the download links to a few core forums and websites where they are picked up by sympathizers who further spread them to a variety of lesser-known outlets. Googling download links (e.g., <http://www.uploadstation.com/file/E5DSt8U>) may therefore be a satisfactory technique to retrieve further terrorist propaganda outlets – the search mechanism resembles a citation search.

Thousands of terrorist videos and audio messages can be found on social media websites such as [YouTube](#), [LiveLeak](#), or [Facebook](#). However, the bulk of these materials are either sympathizers'

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own “fan” creations or re-distributed materials that have initially been published elsewhere. Those materials must be treated with caution because they may be edited or even faked.

#### *Institutional and Disciplinary Repositories*

Many universities and research institutions maintain document servers to provide their employees with a platform for freely distributing and long-term archiving their work-related publications (e.g., working papers, reports, dissertations, or journal articles). These so-called institutional repositories have gained importance in the context of the OA movement as in recent times, several hundred institutions and funding agencies have implemented policies making self-archiving (Green OA) mandatory for their members. An example for an institutional repository is the [Defense Technical Information Center \(DTIC\)](#), the premier repository for research and engineering information for the U.S. Department of Defense. Disciplinary repositories are cross-institutional repositories focusing on a specific scholarly discipline, for example the [Social Science Open Access Repository \(SSOAR\)](#) and the [Social Science Research Network \(SSRN\)](#) for the social sciences. The most authoritative retrieval system for locating OA repositories is the [Directory of Open Access Repositories \(OpenDOAR\)](#). It lists more than 2,200 repositories from all around the world enabling users to search for both repositories and repository contents.

#### *General and Disciplinary Databases*

Databases are produced by renowned companies or research support organisations with high academic and technical expertise. They are the method of choice for searches at article level as they do not limit their indexing on book or periodical titles (as do most library catalogues) but also cover more granulated information such as journal article and book chapter titles. Databases can be subdivided into reference and full-text databases. While the former contain only the bibliographic information required for the mere retrieval of a resource, the latter provide access to the complete document. Another criterion to classify databases is their content: General databases are multidisciplinary in nature and therefore not confined to a specific academic field, whereas disciplinary databases focus on a particular scholarly discipline (e.g., [PsycInfo](#) for psychology) or research domain (see the following chapter).

Databases are selective: While some of them cover a broad spectrum of publication types (e.g., journals, magazines, newspapers, monographs, edited volumes, dissertations, and grey literature), others refine their content to peer-reviewed academic journals. Before inclusion, a publication is evaluated by expert staff in terms of quality, topicality, formal integrity, and other criteria. If the publication has met the selection thresholds, its content (or relevant parts of it) is indexed by multiple facets and enriched with metadata information. Hence, databases provide users with a rich set of search features including Boolean operations, field search, date filtering, and language specification. The most powerful advanced search feature of databases are controlled vocabularies

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(such as subject headings and thesauri) facilitating semantic disambiguation and helping users to find the appropriate search terms. However, this added value has its price: Most databases are subscription-based, only affordable to academic libraries or other institutional bodies.

Usually, academic institutions license databases from content aggregators such as [ProQuest](#), [EBSCO](#), [HighWire](#), and [ingentaconnect](#). Those vendors offer multiple databases under a unified interface allowing users to simultaneously search different databases for a specific search term (a so-called cross-search). Furthermore, it is possible to search each subfile separately – by doing so, users can exploit the search features of a particular database to the maximum. The configuration of a subscription varies from institution to institution depending on which components are contained in a licensed package. “In other words,” as Thomas Mann explains, “it doesn't mean much to say, simply, that you 'have access to ProQuest' – the real question is 'which of the many *components* of ProQuest are included in your local subscription?’”[31] Members of subscribing institutions can access an aggregator's search interface from the IP address range of the particular institution (meaning, they can either log in from computers that are part of the institution's intranet or from an external PC by using a VPN connection and access data).

Several research support organisations provide free information retrieval systems that allow users the simultaneous searching of multiple disciplinary databases. Examples are the [International Relations and Area Studies Gateway \(IREON\)](#), maintained by the German Information Network International Relations and Area Studies (FIV) and [PubPsych](#), maintained by the Leibniz Institute for Psychology Information (ZPID).

If a database does not provide access to the full-text of a required article, researchers are advised to check whether the article is available through other licenses of their institution's library. Journal directories and e-resource access and management services such as [Serials Solutions](#), [TDNet](#), or the [Electronic Journals Library](#) enable researchers to look up library holding information for particular journals. These services identify which electronic journals are available through a library's subscriptions (either for the journal homepage or via a licensed database), with notes on how many years of coverage are available for each journal within each subscription.[32] If an article is not licensed by an institution's library, researchers should try to request a copy via inter-library loan or a commercial document delivery service (usually, this is charged with a small fee). Often, publisher licenses permit the sending of journal articles by e-mail to a restricted number of other persons. Hence, if a researcher notices that a journal is not available at his or her local library but at a colleague's institution, requesting the required article from this colleague may be a successful approach. As the amount of Green OA increases, it is highly recommendable to search for a self-archived version of the article at an author's homepage or institutional repository. To do so, researchers are advised to enter the title of the article in quotation marks in the search box of a major search engine and narrow the search to PDF files (e.g., “*Islam, Jihad, and Terrorism in Post-9/11 Arabic Discussion Boards*” *filetype:pdf*). Contacting the author directly and

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kindly asking him/her to send the article may bring a solution as well, as most academics are happy to see people showing interest in their research activities. Many publishers offer a pay-per-view option for articles – however this should be considered the very last choice as the requested fees are usually fairly expensive.

There are several ways to locate databases. Usually, academic institutions provide information on their library homepages about which databases they subscribe to and how to access them. Asking reference librarians at a local institution helps researchers learn quickly which databases are available in their field and which access options exist. The [Database Infosystem \(DBIS\)](#), maintained by the Regensburg University Library, covers more than 10,000 profiles of international databases (including 3,800 OA databases). The profiles can be keyword-searched or browsed either alphabetically or by academic discipline. An advanced search menu enables users to conduct very precise search operations. DBIS also provides holding information for institutions in German-speaking countries. An extensive reference guide in print form is the annually published Gale Directory of Databases, listing more than 14,000 international databases.

Researchers have to bear in mind that databases are selective – e.g., they do not cover every journal in a field and the included journals are often not indexed from cover to cover. “For this reason, even if two databases index the same journal the coverage of articles might differ.”[33] Usually, database vendors or content aggregators provide coverage lists, documenting which particular sources are indexed. Due to coverage limitations, researchers are advised to always employ several different databases in order to avoid missing important publications.

### *Specialized Databases*

Most specialized databases are produced by experts in the field. Selectivity is their main advantage: Contrary to general or disciplinary databases, they focus on a specific research domain, excluding any irrelevant content. Specialized terrorism research databases enable researchers to search for a broad spectrum of reference and full-text records (academic or professional literature, attacks statistics, group, incident, or country profiles, etc.). Examples of terrorism databases include:

- [Database Terrorism, Counterterrorism and Radicalization \(Leiden University\)](#): covers current research projects on terrorism, counter-terrorism, radicalisation, and future forecasts. A selection of annual reports and counter-terrorism strategies of the leading intelligence agencies is included as well.
- [Global Terrorism Database \(GTD\) \(National Consortium for the Study of Terrorism and Responses to Terrorism, START\)](#): provides information on over 104,000 terrorist attacks around the world from 1970 through 2011.

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- [International Security & Counter-Terrorism Reference Center \(EBSCO\)](#): contains over 1.5 million records from peer-reviewed journals and other full-text periodicals, books, and reference works, reports and analyses from leading experts and consultancies, primary source documents from government agencies, legislatures, and NGOs, in-depth background information summaries on persons, organisations, places, and events relating to homeland security and international terrorism, and an image collection.
  - [RAND Database of Worldwide Terrorism Incidents](#): covers 36,000 worldwide terrorism incidents from 1972 through 2009 (further updating announced).

For an extensive review of terrorism research databases, see:

- Neil G. Bowie; Alex P. Schmid (2011): Databases on Terrorism. In: Alex P. Schmid (Ed.): *The Routledge Handbook of Terrorism Research*. New York: Routledge, pp. 294-340.

### *General Search Engines*

Designed to cope with the exponentially growing amount of documents, multimedia files, and other materials on the World Wide Web, search engines enable researchers to conduct keyword searches over a large volume of websites. As only the data processing capacity of machines can (at a rudimentary level) handle the billions of WWW items globally available, search engine technology relies on machine indexing. Consequently, one of the most important things users have to bear in mind when using a search engine is that “there is virtually no human selectivity involved in determining what webpages are included in the search engine’s database”[34]. Hence, contrary to intellectually indexed retrieval systems, the quality evaluation has to be done by the user him/herself.

A search engine's content is acquired by using a spider software which – starting from a list of given URLs – crawls the web for new websites and page updates and stores the retrieved content. By means of an indexing software, the full-text of the websites is indexed word by word. A further program – the search engine in the narrow sense – matches a user's query with the relevant items in the database. The centerpiece of this software is the so-called ranking algorithm – it determines the order in which the retrieved results are displayed to the user, trying to place the most relevant records at the top of the page. To compute the relevance of a page, search engines use different ranking criteria, such as the popularity of a website (measured by the number of links pointing from external websites to the page in evaluation), the number of retrieved keywords (the more keywords from a user's query are contained in a particular page, the higher is its relevance score), or the location of the keywords (the position of a keyword in the title, URL, heading, or initial paragraph of a document is scored higher than its appearance in the text body).

On its HTML interface, a search engine provides users with different search options ranging from simple keyword searching to complex Boolean operations. Prefixes such as filetype: (restricts the results to specific filetypes, such as .pdf or .jpg) or intitle: (retrieves pages containing a user-requested keyword in the title) allow users to filter results for excluding potentially irrelevant ballast. The search operations can either be specified through a menu – researchers are advised to use the advanced search menu to optimise results – or by qualifying a term directly by inserting it together with prefixes or Boolean syntax in the default search box. The exact configuration of search options and retrieval syntax varies from search engine to search engine, and search engine technology is subject to constant change. Hence before conducting a search, researchers should consult a search engine's online instructions page to become familiar with the engine's specifics. Online video tutorials teach researchers quickly and easily the basic and advanced search features of a particular search engine. A recommendable online course focused on Google is [Power Searching with Google](#).

To date, [Google](#) is the most powerful search engine with regard to database size, search functionality, ranking mechanism, and additional services. However, it is important to keep in mind that – though indexing billions of webpages – Google (and other search engines as well) do not cover the whole web. Actually, the biggest part of the web is not indexable at all – these portions of the Internet are often referred to as the Deep Web.[35] Because the search engine technology of different systems varies, every search engine will display different results for the same keywords, hence it is advisable to use more than one search engine to make a search more exhaustive.

Sometimes, a website indexed by a search engine cannot be accessed any more because it has been removed. In this case, researchers should try to retrieve an archived snapshot of the website by inserting the defunct URL in the [wayback machine](#), an archive of over 240 billion webpages from 1996 onwards. The wayback machine is also very useful to retrieve older versions of a website to find previous content or to get an impression of a website's historical development.

To locate search engines, researchers are recommended to use search engine directories, such as [Search Engine Colossus](#), the [Search Engines category of the Open Directory Project](#), and the [Wikipedia list of search engines](#) which compile links to international and local search engines from all over the world. Web searching user guides provide background information on search engines, compare their search functionalities, and report on modifications and new features. Examples are [Search Engine Watch](#), and [Search Engine Showdown](#). Deep Web directories such as [Complete Planet](#) compile links to major Deep Web websites.

### *Specialized Search Engines*

While general search engines cover every topic and indexable content, specialized search engines confine their indexing on specific subjects, geographic regions, or content types.

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Specialized search engines can be located with the previously mentioned search engine directories. Of particular importance for researchers are academic search engines. These retrieval systems cover scholarly and academic content only. The most prominent of them is [Google Scholar](#). It indexes peer-reviewed journal articles (including preprints), academic books, theses, conference proceedings, grey literature, abstracts, patents, and legal documents. Due to agreements with publishers, governmental and non-governmental organisations, universities and other academic institutions, Google Scholar has gained permission to index databases that would be otherwise beyond the reach of search engine technology (Deep Web content).

Google Scholar provides specific search features that are not available at the general Google search interface: For example, clicking on the title of a record will take researchers to an abstract page of the retrieved resource. If a full-text version is available, a link to it (including information on its file format and hosting source) is provided at the right hand of the particular result. For each result, metadata information such as author, publication year, and source, is displayed. Via the “Cited by” link, researchers can look up which articles in Google's index have cited the particular resource. The “Cite” link will open a window with a citation template for MLA, APA, and Chicago style including import links for different citation managers. By clicking on “Related articles”, similar articles (identified by an automatic word matching) will show up. Additional to these specific search features, Google's general search functionality – including advanced search options such as date filtering, Boolean operations, and prefixes – can be employed as well. For more information on how to use Google Scholar, researchers are encouraged to read this [tutorial](#) on the Google homepage.

Beyond Google Scholar, several other recommendable academic search engines exist. Examples include [Microsoft Academic Search](#), [Scirus](#), and [BASE](#). Every academic search engine produces different results and has its own retrieval syntax specifics. Hence, researchers are advised to use more than one engine for a particular search purpose and should consult the online instruction pages to get information on each engine's specifics.

### *Refining your Search: Search Strategies*

To be successful, a literature search has to be well-planned. Hence, before starting, researchers should try to define their information needs as exactly as possible and break it down into component parts. What concepts are involved? What are appropriate keywords, synonyms, related terms and phrases? What information sources are best suited for the particular search purpose?

Carefully documenting the search process helps researchers to keep track of the search terms, sources, and retrieval systems they have used. To keep a search topical, it is advisable to note the date, when a relevant source or retrieval system was last visited. This will enable researchers to later seamlessly continue a search until present time. Logging a search will also make it easier to

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transparently describe for readers the undertaken research steps in the literature review section of an article.

As most literature searches have to be realized within a limited time-frame, researchers have to find the right balance between the precision and the completeness of a search: Narrow searches may omit relevant documents, while wider searches will retrieve more documents making a more laborious selection necessary.[36] For the sake of completeness, the usage of a broad pool of retrieval systems and methods is advised (see the previous sections of this Guide). To optimise the precision of a search, researchers should employ different search strategies to refine their results. The most important strategies are the identification of appropriate search terms and the accurate application of retrieval syntax.

### *Identifying Appropriate Search Terms*

Every literature retrieval system is text-based, so the choice of search terms is a decisive factor for the success or failure of a search. As mentioned previously, a literature search is a hermeneutic process: Reading helps researchers become more familiar with specialized terms, enabling them to improve further searches. Hence, the identification of appropriate search terms is not a linear process but evolves over time. At the beginning of the search process, researchers should reflect on which terms or phrases are best suited to conceptualize their topic. In the next step, they should specify synonyms, related terms, or variant phrases. Dictionaries or thesauri – particularly those integrated within databases – can be a fruitful inspiration source for this purpose. So are library catalogues or databases: Researchers can look up records of articles that are exactly on target and check which indexing terms have been assigned by professional indexers to describe them. Another useful approach is identifying highly relevant articles and scanning them for terms best expressing a topic.

The most important thing to bear in mind when choosing search terms is the difference between uncontrolled (i.e., free text) keywords and controlled vocabularies or subject classifications. Keyword searching is the most often practised search strategy in the Internet age. The bulk of machine-indexed retrieval systems (most notably search engines) is designed for – and refined to – keyword searching. The main reason for the popularity of keyword searching is its ease and speed: A user enters a keyword in the search box and the search engine matches the query against its index, returning within seconds the results algorithmically determined to be the most relevant. A search engine reliably returns all indexed documents containing the requested keywords – but only these keywords – meaning that it is unable to identify resources lying in “blind spots”. Blind spots are caused by “the *unpredictability* of the many variant ways the same subject can be expressed, both within a single language [...] and across multiple languages”[37]. In Philipp Lenssen’s words “a keyword is also literally a key: without the key, the door remains locked.”[38] For example, if a document includes a synonym instead of a user-requested keyword,

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it will not be retrieved. Current search engines provide users with an option to search for similar results, however researchers should know that these related pages are retrieved by an automatic matching of the words in the text of a retrieved document against other documents without any intellectual involvement. While it may sometimes be necessary to find documents containing the exact keywords, most literature searches have the aim to retrieve as many relevant resources on a topic, regardless whether they include the keywords a user had in mind or other – but equally relevant – terms s/he did not think of before.[39]

Spelling can also be problematic. For example, a researcher may enter “al-Qaeda” as a keyword, and the search results may omit all items referencing “al-Qaida.” The same holds for other terrorist groups with multiple spellings, like “Hezbollah,” “Hizbollah,” Hizballah and “Hizb’Allah.” A search engine must therefore incorporate algorithms that can take into account such variations in spelling, in order to ensure the most comprehensive search results. At present, this functionality is not state of the art for major search engines such as Google.

Another problem inherent to keyword-searching is caused by the semantic ambiguity of the natural language: The meaning of words depends on their context, e.g., the phrase “lone wolf” in context of terrorism (i.e., a self-radicalised person planning or perpetrating a terrorist attack) means something different than a “lone wolf” in sociology (i.e., a human loner, outsider), or a “lone wolf” in biology (an animal driven from the pack). To date, no “binary thinking” software algorithm is able to reliably solve this interpretation problem. Hence, a terrorism-related keyword search for that phrase will return irrelevant clutter from the other semantic domains.

Intellectually indexed retrieval systems (such as library catalogues or databases) offer keyword-searching as a basic option but additionally provide more sophisticated search functionality involving controlled vocabularies and subject classifications. Subject classifications assign resources to different pre-organised classes, which are subdivided into several levels of sub-classes of increasing granularity (e.g., violence>political violence>terrorism>suicide terrorism). Due to the arrangement in classes, a semantic context is created, eliminating ambiguity. The main advantage of a subject classification is its recognition effect: By browsing through different classes and sub-classes, users recognize in a systematic manner more conceptual approaches to a topic than they would have identified by themselves. This mechanism is comparable to browsing a library bookshelf: When searching for a particular book, it often happens that one discovers an even more relevant book only because it stands next to the one initially sought.

Controlled vocabularies consist of predefined authorized terms (often called subject terms) which have to be manually assigned by human indexers following specific rules. Documents are exclusively tagged with these terms regardless whether they actually include the terms or synonyms, different spellings, or other-language words so that all topical items are described by the same indexing terms. This standardized collocation approach – only realizable by laborious intellectual work – solves the problem of variant expressions: If a researcher uses the appropriate

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controlled vocabulary term, s/he will receive all relevant documents from a database covering a specific concept, regardless of the words authors used to express it. Powerful controlled vocabularies include cross-references pointing users who entered inappropriate free text terms to the appropriate controlled vocabulary terms. A common form of a controlled vocabulary is a thesaurus – a word net whose terms are connected by different relations (e.g., synonym, antonym, broader term, narrower term, etc.), providing semantic clusters that eliminate ambiguity. Usually, the word net is browsable, sometimes even in a visualized form. A thesaurus is not only suited to identify appropriate search terms in the retrieval system it belongs to but can also be a good inspiration for finding proper terms for keyword searches in search engines. Examples for controlled vocabularies (and subject classifications as well) are the U.S. [Library of Congress Subject Headings \(LCSH\)](#) or the [Medical Subject Headings \(MeSH\)](#) by the U.S. National Library of Medicine.

### *Applying Retrieval Syntax*

Most retrieval systems provide multiple refining options to limit or expand the number of retrieved results. Usually, the syntax triggering the options can either be entered directly along with the search terms in the main search box or can be requested by specifying natural language options in the advanced search menu. While the latter method is easier to implement, the first one is the more powerful. In any case, the syntax gives a retrieval system additional information on how to further process the inserted terms. As search technology is both system-specific and subject to constant change, researchers are advised to visit the online instruction pages of their favourite retrieval systems once in a while to stay informed about syntax details. The most common types of retrieval syntax are outlined below.

The Boolean operators AND, OR, and NOT enable researchers to select different sets of documents and combine the results. The Boolean AND limits the total results set to documents containing all terms a user has entered (in a mathematical sense: the intersecting set); e.g., the query *terrorism AND media* retrieves documents containing both keywords and excludes results comprising only one of them. AND will decrease the number of results. It can be applied to connect different concepts. With the Boolean OR a user can request results which include at least one of the terms or all of them (the set union); for example, *terrorism OR media* will return documents containing either terrorism or media as well as both terms. OR expands the number of documents. It is handy to include synonyms in a single query. The Boolean NOT excludes documents containing a particular term from the results, thereby limiting the number of records; e.g., *terrorism NOT suicide* will exclude all documents including the term suicide – even if the term terrorism is contained (difference quantity). NOT should be applied with care as it may block more results than wished. Some retrieval systems support the use of parentheses to indicate the order of operations, e.g. *(terrorism AND media) OR (terrorism AND internet) NOT Mexico*. While the functionalities of Boolean operators are the same across different retrieval systems, the

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syntax triggering them is not. To mention a few examples: While some retrieval systems use a plus sign to express AND, entering a plus sign in Google along with a term (e.g., *+terrorism*) prompts Google to search for the keyword in its social networking and identity service Google+. In Google, NOT is requested by entering a minus sign in front of a word (e.g. *terrorism -mexico*). The major search engines use an implicit AND, meaning that they automatically AND all entered terms. Stop words (i.e., terms with limited meaning, such as conjunctions or pronouns) are ignored by many retrieval systems – Google is an exception here.

Proximity operators such as ADJ, NEAR, or AROUND enable users to conduct fairly precise searches. They request a result not only to contain all entered keywords but also to include these close to each other. Employing proximity operators reduces the possibility that keywords appear in undesired contexts. The actual operator name, the order in which the terms may appear, and the allowed distance between the keywords are system-dependent. Some retrieval systems (for example, Google) enable users to specify exactly the maximum number of words allowed to occur between search terms.

Even more restrictive is a phrase search. Entering a phrase enclosed in quotation marks (e.g., “*suicide terrorism*”) will prompt a retrieval system to return documents containing the exact phrase, i.e., the words must appear next to one another in exactly the same order the user entered them. A phrase search is the method of choice to search for connected terms (e.g., personal names, direct quotes, or article or book titles).

While a phrase search is used to decrease the amount of results, word truncation is employed to expand the number of records by searching for different variations of a search term. A truncation symbol (also called wildcard), often a question mark, an exclamation point, or an asterisk, is used to replace one or more characters of a term, enabling users to search with the stem or root of a word. A retrieval system will return all documents beginning with the particular character string (e.g., *terror\** will give back documents containing words such as terrorists, terrorism, or terrorizing). Word truncation should be used with care because it may produce unwarranted clutter, e.g., searching for *terror\** will also return records dealing with the PC game Terrordrome.

A field search allows users to search for keywords occurring in specific database fields of a record, such as the author, title, keywords, abstract, document type, publication year, or subject field. While these search features can be easily specified in the advance search menu of a retrieval system, the quickest way to employ them is to use prefixes to qualify a term directly when entering it in the main search box. The syntax for prefixes is variant across different retrieval systems, for example, WorldCat uses *au:* for author, while *author:* is used in Google Scholar. A very powerful method to zero in quickly on highly relevant resources is restricting a search to the title field. However, researchers will inevitably miss important resources due to the many variant ways a topic can be expressed. In contrast, searching for terms contained in the full-text of a

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resource will return a vast amount of resources, including much irrelevant clutter. Narrowing a search to the abstract field is therefore often a good compromise.

By the help of a controlled vocabulary users can find all items in a retrieval system indexed under a particular topic, making a search exhaustive and highly precise. Researchers are therefore advised to use this option whenever available. Controlled vocabulary search functionality is provided by human-indexed retrieval systems such as library catalogues and databases whereas it is absent in search engines. While controlled vocabulary searches are more powerful than keyword searches, they are usually not intuitive and more complex to implement as they require a user to have knowledge of the specific vocabulary. Controlled vocabularies are often system-specific and thus not standardized across different retrieval systems. Hence, users should visit the online instruction pages of a retrieval system to learn how to use a particular vocabulary. To call up the controlled vocabulary search options, researchers usually have to go to the advanced search page, as keyword search is the default setting for most retrieval systems. When uncertain about what controlled terms to use, researchers should call up relevant documents to check which terms professional indexers have assigned to describe them.

#### *Last but not Least: Ask a Human*

In the digital age, researchers might be tempted to conclude that a simple keyword search with machine-indexed online retrieval systems is the quickest and most convenient way to retrieve literature. However, solely relying on machine-power (“hard skills”) can get them stuck plowing through vast amounts of low-quality results and irrelevant clutter, wasting much of their precious time. When researchers recognize that a lot of valuable information is not encoded in computer systems but in human minds, they may opt to use an alternative approach: Talking to humans (“soft skills”) will enable them to reach their objective more efficiently and effectively and may also lead them to information that cannot be found anywhere else. This outcome is worth overcoming any personal inhibitions to contact other people. In most cases, people who are asked for help will not be dismissive but rather flattered that they are considered knowledgeable.

There are several complementary approaches to employ soft skills. Asking a librarian will provide researchers with shortcuts to literature they cannot reach on their own. Librarians share well-founded expertise on where to retrieve relevant high-quality resources in their library and point patrons to useful materials housed elsewhere. To counter-balance people's tendency to rely solely on the Internet and avoid traditional libraries, librarians engage in efforts to find new and flexible ways to distribute their collections on new devices and try to serve their patrons by offering user-oriented online services, e-books, and technology training classes.[40] They have thorough knowledge on which retrieval systems are best suited for a particular search purpose and are well-versed in the syntax of different electronic retrieval systems. Additionally, they are familiar with the landscape of traditional print sources. As “the ideal library expert on terrorism

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knowledge is hard to find in a non-specialized library”[41], researchers should choose from among the library staff the librarian whose field of competence is most closely related to terrorism research (e.g., political science or criminology) and describe their specific information needs as clearly as possible. During personal conversation, a good librarian will reveal aspects of a search question researchers were probably not aware of beforehand.

Asking a terrorism expert will provide researchers with unanticipated insights into the expert's specific domain of terrorism research. Experts can name the core authors, publications, conferences, and research approaches in their field – information of this kind is especially valuable for novices who struggle to get a comprehensive understanding of the research landscape. Most experts are flattered when people show interest in their research activities and may even share brand-new resources such as unpublished manuscripts or other kinds of work in progress. By talking to an expert, researchers may get immediate corrective feedback on their work, including constructive criticism on weak points of their hypotheses – an interactive feature no computer-based retrieval system can offer. Moreover, personal conversations can build the basis for collaboration: When discovering collective research interests, researchers may be inspired to team up with each other (e.g., for embarking on new research projects or co-authoring papers). A good starting point for communication is contacting authors of relevant books or articles. Many publication outlets require authors to provide corresponding information or at least the name of their affiliation. In the Internet age, numerous researchers have homepages, blogs, profiles on institutional webpages, or accounts in social networks with contact options. Another way to make contact is networking.

In the digital age, networking is easier than it has ever been. Social networking services such as [Facebook](#), [Xing](#), or [Mendeley](#) enable researchers to easily contact colleagues from all over the world to collaborate with them. Online discussion groups offer opportunities to get in contact with terrorism experts as well. By the help of message-board search engines such as *Omgili*, researchers can scan millions of online discussion forums for conversations related to their topic of interest. Professional and academic associations, societies, and networks such as the [Terrorism Research Initiative \(TRI\)](#), the [Terrorism and Political Violence Association \(TAPVA\)](#), or the [German Middle East Studies Association for Contemporary Research and Documentation \(DAVO\)](#) serve to bring together academics, professionals, policy-makers, think-tanks, and NGOs. Currently, the TRI is in the process of establishing [national networks of PhD thesis writers](#). So far, seven national networks have come into existence in the UK, The Netherlands and Flanders, Russia, the U.S., Canada, South Africa, and Australia. In Germany, the [Terrorism Research Network](#) serves a similar purpose. The [Database of Terrorism, Counterterrorism and Radicalization \(Leiden University\)](#) lists current research projects on terrorism, counter-terrorism, radicalisation, and future forecasts with each record containing contact data. Finally, international and national conferences provide multiple opportunities to get into personal contact with researchers and professionals in the field.

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*Addendum: Further Literature*

This guide has been conceptualized in article format, which requires summarizing and omitting further details. Researchers are therefore encouraged to read additional literature to deepen their knowledge on information retrieval. Some recommended readings are provided below:

- Ben Benavides (2012, September): *Open Source Intelligence (OSINT) 2oolKit On The Go*. URL: <http://www.phibetaiota.net/wp-content/uploads/2009/07/OSINT-2ool-Kit-OnThe-Go-Bag-O-Tradecraft.pdf>
- Eric Price (2011): Library and Internet Resources for Research on Terrorism. In: Alex P. Schmid (Ed.): *The Routledge Handbook of Terrorism Research*. New York: Routledge, pp. 443-456.
- National Security Agency (NSA), Center for Digital Content (2007, February): *Untangling the Web: A Guide to Internet Research*. (DOCID: 4046925). URL: [http://www.nsa.gov/public\\_info/files/Untangling\\_the\\_Web.pdf](http://www.nsa.gov/public_info/files/Untangling_the_Web.pdf)
- Randolph Hock (2010): *The Extreme Searcher's Internet Handbook: A Guide for the Serious Searcher*. (3rd ed.). Medford: CyberAge Books.
- Stephan Spencer (2011): *Google Power Search: The Essential Guide to Finding Anything Online with Google*. Sebastopol: O'Reilly.
- Thomas Mann (2005): *The Oxford Guide to Library Research: How to Find Reliable Information Online and Offline*. (3rd ed.). Oxford: Oxford University Press.

Also, in conjunction with Reuser's Information Services (RIS), IHS Consulting offers a fee-based [Open Source intelligence \(OSINT\) collection and analysis training service](#). The program aims at enabling researchers to more effectively collect and analyse information and produce better quality publications.

## Appendix

Table A1: Bibliographies published in Perspectives on Terrorism (status: June 2013).

Author(s)	Title	Issue
Benjamin Freedman	<a href="#">Terrorism Research Centres: 100 Institutes, Programs and Organisations in the Field of Terrorism, Counter-Terrorism, Radicalisation and Asymmetric Warfare Studies</a>	4(5)
Berto Jongman	<a href="#">Internet Websites and Links for (Counter-)Terrorism Research</a>	5(1)
Coordinators of TRI's National Networks	<a href="#">Preliminary and Partial Inventory of PhD Theses and their Authors</a>	7(2)
David C. Hofmann	<a href="#">Review Essay: Twenty Important Journal Articles on Radicalisation to, and De-Radicalisation from, Terrorism</a>	6(6)
David C. Hofmann; Alex P. Schmid	<a href="#">Selected Literature on (i) Radicalization and Recruitment, (ii) De-Radicalization and Dis-Engagement, and (iii) Counter-Radicalization and Countering Violent Extremism</a>	6(6)
Eric Price	<a href="#">Bibliography: Inside Terrorist Organisations</a>	6(4-5)
Eric Price	<a href="#">Bibliography: Literature on Terrorism in History</a>	6(2)
Eric Price	<a href="#">Bibliography: Literature on the Future of Terrorism (including Trends)</a>	6(3)
Eric Price	<a href="#">Dissertations and Theses on (Counter-)Terrorism and Political Violence (1980-2010)</a>	4(3)
Eric Price	<a href="#">Literature on Al-Qaeda since 2001</a>	7(1)
Eric Price	<a href="#">Literature on Kidnapping for Ransom and for Political Concessions</a>	7(2)
Eric Price	<a href="#">Literature on Refugee Situations (including Internally Displaced Persons) and Terrorism (incl. other forms of Political Violence and Armed Conflict)</a>	7(3)
Eric Price	<a href="#">Literature on Right-wing and Vigilante Terrorism</a>	5(5-6)
Eric Price	<a href="#">Literature on Terrorism, Media, Propaganda &amp; Cyber-Terrorism</a>	6(1)
Eric Price	<a href="#">Literature on Victims of Terrorism</a>	6(6)
Eric Price	<a href="#">New Literature on Terrorism and Political Violence</a>	4(1)
Eric Price	<a href="#">Selected Literature on Conflict Prevention, Crime Prevention, Terrorism Prevention, and Violence Prevention</a>	5(2)
Eric Price	<a href="#">Selected Literature on Human Rights and Terrorism</a>	4(4)
Eric Price, Alex P. Schmid	<a href="#">Selected Literature on Radicalization and De-radicalization from Terrorism</a>	4(2)
Eric Price	<a href="#">Selected Literature on Terrorism and CBRN Threats</a>	4(5)
Eric Price	<a href="#">Selected Literature on Terrorism and Organized Crime</a>	4(6)
Eric Price	<a href="#">Selected Literature on Terrorism and Political Violence/Conflict in Africa since the Second World War</a>	5(3-4)
Eric Price	<a href="#">Selected Literature on Terrorism and Religion</a>	5(1)
Gillian Duncan	<a href="#">New Literature on Terrorism and Political Violence</a>	3(3)
Jaclyn A. Peterson	<a href="#">Three Bibliographies: (i) Drones and Targeted Killing, (ii) Prosecuting Terrorism, and (iii) Enhanced Interrogation Techniques v. Torture</a>	6(3)
Joshua Sinai	<a href="#">Review Essay: Top 50 Books on Terrorism and Counterterrorism</a>	2(11)
Joshua Sinai	<a href="#">Counterterrorism Bookshelf</a>	7(3)
Joshua Sinai	<a href="#">Terrorism Bookshelf: Top 150 Books on Terrorism and Counter-Terrorism</a>	6(2)
Judith Tinnes	<a href="#">100 Core and Periphery Journals for Terrorism Research</a>	7(2)
Judith Tinnes	<a href="#">230 Websites and Blogs for Terrorism Research</a>	7(3)
Judith Tinnes	<a href="#">Literature on Terrorism and the Media (including the Internet): an Extensive Bibliography</a>	7(1)

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**About the Author:**

**Judith Tinnes, Ph.D.**, studied Information Science and New German Literature and Linguistics at the Saarland University (Germany). Her doctoral thesis dealt with Internet usage by Islamist terrorists and insurgents. While working for several research support organisations, she has gained expertise in information retrieval, librarianship and electronic publishing. Currently she works in the Research & Development department of the Leibniz Institute for Psychology Information (ZPID) (<http://www.zpid.de>) for an open-access publishing project. In her spare time, she works as an Editorial Assistant for [Perspectives on Terrorism](#).

**Notes**

[1] For more information on the Deep Web see Michael K. Bergman (2001, August): The Deep Web: Surfacing Hidden Value. (White Paper). *The Journal of Electronic Publishing*, 7(1). DOI: <http://dx.doi.org/10.3998/3336451.0007.104>; the information materials on the BrightPlanet website under <http://www.brightplanet.com/deep-web-university/> and <http://www.brightplanet.com/deep-web-university-2/>; Pierluigi Paganini (2012, September): The Good and the Bad of the Deep Web. *The Hacker News*, 14, pp. 4-12. URL: <http://news.thehackernews.com/THN-September2012.pdf> and Randolph Hock (2010): *The Extreme Searcher's Internet Handbook: A Guide for the Serious Searcher*. (3rd ed.). Medford: CyberAge Books, pp. 20-23.

[2] cf. Lee Rainie (2010, May-June): How Libraries Can Survive in the New Media Ecosystem. *El profesional de la información*, 19(3), p. 313. URL: <http://www.elprofesionaldelainformacion.com/contenidos/2010/mayo/13.html>

[3] Dana Neacsu (2013, February): The Internet: Academic Foe or Friend. *AALL Spectrum*, 17(4), p. 26. URL: <http://www.aallnet.org/main-menu/Publications/spectrum/Archives/vol-17/No-4/foe-or-friend.pdf>

[4] Candy Davis (2008): Librarianship in the 21st Century: Crisis or Transformation? *Public Library Quarterly*, 27(1), p. 73. DOI: <http://dx.doi.org/10.1080/01616840802122401> URL: <http://twiki.fe.up.pt/pub/PESIMCI1011/Pesi1011Work2Group2ArtigosSeleccionados/Artigo1Grupo2.pdf>

[5] Thomas Mann (2005): *The Oxford Guide to Library Research: How to Find Reliable Information Online and Offline*. (3rd ed.). Oxford: Oxford University Press, p. 262.

[6] Joseph K. Young; Michael G. Findley (2011): Promise and Pitfalls of Terrorism Research. *International Studies Review*, 13(3), p. 411. DOI: <http://dx.doi.org/10.1111/j.1468-2486.2011.01015.x>

[7] cf. Avishag Gordon (2007, August): Transient and Continuant Authors in a Research Field: The Case of Terrorism. *Scientometrics*, 72(2), pp. 213-224. DOI: <http://dx.doi.org/10.1007/s11192-007-1714-z>

[8] cf. Avishag Gordon (2005, March): The Peripheral Terrorism Literature: Bringing it Closer to the Core. *Scientometrics*, 62(3), p. 403-414. DOI: <http://dx.doi.org/10.1007/s11192-005-0030-8>

In a recent citation analysis, Bullis and Irving found out that the references in their citation data corpus were dispersed among 325 journals indexed by the Social Science Citation Index (SSCI) indicating the multidisciplinary nature of terrorism research. (cf. Daryl R. Bullis; Richard D. Irving (2013, March): Journals Supporting Terrorism Research: Identification and Investigation into their Impact on the Social Sciences. *College & Research Libraries*, 74(2), p. 123. URL: <http://crl.acrl.org/content/74/2/119.abstract>)

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[9] One method to check the objectivity of an online resource is to look up who owns the domain of a website via <http://whois.net>. The “About” Section of a website may offer useful information as well, though it should be treated with care, because – other than with Whois.net – the information is published by the site owners themselves and may be biased or misleading. The [Evaluation Resource Quality research guide](#) by the Valparaiso University and the website [The Virtual Chase](#), maintained by the law information portal Justia.com, provide helpful evaluation criteria for judging the quality of websites.

[10] Brett B. Bodemer (2012, July): The Importance of Search as Intertextual Practice for Undergraduate Research. *College & Research Libraries*, 73(4), p. 340. URL: <http://crl.acrl.org/content/73/4/336.abstract>

[11] cf. Sebastian K. Boell; Dubravka Cecez-Kecmanovic (2010, June): Literature Reviews and the Hermeneutic Circle. *Australian Academic & Research Libraries*, 41(2), pp. 129-144 and Sebastian K. Boell; Dubravka Cecez-Kecmanovic (in press): Conducting Literature Reviews: A Hermeneutic Approach to Intertwining Literature Review Development and Literature Searches. *Communications of the Association for Information Systems*.

[12] Samuel C. Bradford (1985, April): Sources of Information on Specific Subjects. *Journal of Information Science*, 10(4), p. 176. DOI: <http://dx.doi.org/10.1177/016555158501000407> (Original work published 1934 in *Engineering*, 137(3550), pp. 85-86).

[13] Avishag Gordon (2005, March), op. cit., p. 404.

[14] *ibid.*, p. 404. The definition can be applied to non-journal sources as well.

[15] cf. Thomas Mann (2005), op. cit., p. 267.

[16] cf. Sebastian K. Boell; Dubravka Cecez-Kecmanovic (in press), op. cit.

[17] Donna M. Mertens (2010): Literature Review and Focusing the Research. In: *Research and Evaluation in Education and Psychology: Integrating Diversity with Quantitative, Qualitative, and Mixed Methods*. (3rd ed.). Thousand Oaks: SAGE, p. 89.

[18] cf. Thomas Mann (2005), op. cit., p. 143.

[19] cf. *ibid.*, p. 133.

[20] cf. Heather Morrison (2012, May 02): About 30% of Peer-Reviewed Scholarly Journals are now Open Access. *The Imaginary Journal of Poetic Economics*. URL: <http://poeticeconomics.blogspot.de/2012/05/about-30-of-peer-reviewed-scholarly.html>

[21] For a critical view on the scholarly publishing landscape see Björn Brembs (2009): *What is Wrong with Scholarly Publishing Today?* (PowerPoint Presentation). URL: <http://de.slideshare.net/brembs/whats-wrong-with-scholarly-publishing-today-ii>

[22] For a concise introduction to OA see Peter Suber (2012): *Open Access*. Cambridge: MIT Press.

[23] This implies that the decision whether an article is self-archived or not lays in an author's hands. However, in recent times, several hundred institutions and funding agencies have implemented policies making self-archiving mandatory for scholars. For more information see: Yassine Gargouri et al. (2010, October): Self-Selected or Mandated, Open Access Increases Citation Impact for Higher Quality Research. *PLoS ONE*, 5(10), Article e13636. DOI: <http://dx.doi.org/10.1371/journal.pone.0013636> and Jingfeng Xia et al. (2012, January): A Review of Open Access Self-Archiving Mandate Policies. *portal: Libraries and the Academy*, 12(1), pp. 85-102. DOI: <http://dx.doi.org/10.1353/pla.2012.0000>

[24] cf. Yassine Gargouri et al. (2012, September): *Green and Gold Open Access Percentages and Growth, by Discipline*. Paper presented at the 17th International Conference on Science and Technology Indicators (STI), Montreal, Canada, September 05-08, 2012. URL: <http://eprints.soton.ac.uk/340294>

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- [25] cf. Eric Price (2011): Library and Internet Resources for Research on Terrorism. In: Alex P. Schmid (Ed.): *The Routledge Handbook of Terrorism Research*. New York: Routledge, p. 446.
- [26] Thomas Mann (2005), op. cit., p. 205.
- [27] cf. Eric Price (2011), op. cit., p. 446.
- [28] Translated by Globalsecurity.org: [http://www.globalsecurity.org/security/library/report/2005/zawahiri-zarqawi-letter\\_9jul2005.htm](http://www.globalsecurity.org/security/library/report/2005/zawahiri-zarqawi-letter_9jul2005.htm)
- [29] see for example Alex P. Schmid; Janny de Graaf (1982): *Violence as Communication: Insurgent Terrorism and the Western News Media*. London: SAGE; Judith Tinnes (2012, March): Premiere oder Wiederaufführung? Ein Vergleich der Kommunikationsstrategien von RAF und Al-Qaida. *Jihadism online*. URL: [http://www.univie.ac.at/jihadism/blog/wp-content/uploads/2012/03/Paper\\_AQ\\_Vs\\_RAF\\_JTinnes.pdf](http://www.univie.ac.at/jihadism/blog/wp-content/uploads/2012/03/Paper_AQ_Vs_RAF_JTinnes.pdf); Peter Waldmann (2012): Thesen: Terrorismus und Kommunikation. In: Klaus Weinhauer; Jörg Requate (Eds.): *Gewalt ohne Ausweg? Terrorismus als Kommunikationsprozess in Europa seit dem 19. Jahrhundert*. Frankfurt am Main: Campus, pp. 49-64.
- [30] see for example Nico Prucha, Ali Fisher (2013, June): Tweeting for the Caliphate: Twitter as the New Frontier for Jihadist Propaganda. *CTC Sentinel*, 6(6), 19-23. URL: <http://www.ctc.usma.edu/wp-content/uploads/2013/06/CTCSentinel-Vol6Iss6.pdf>. For a resource guide on the subject see: Judith Tinnes (2013, February): Literature on Terrorism and the Media (including the Internet): An Extensive Bibliography. *Perspectives on Terrorism*, 7(1, Supplement), pp. S1-S295. URL: <http://www.terrorismanalysts.com/pt/index.php/pot/article/view/247>
- [31] Thomas Mann (2005), op. cit., p. 109.
- [32] cf. *ibid.*, p. 93.
- [33] Sebastian K. Boell; Dubravka Cecez-Kecmanovic (2010, June), op. cit., p. 131.
- [34] Randolph Hock (2010), op. cit., p. 61.
- [35] see footnote [1]
- [36] cf. Sebastian K. Boell; Dubravka Cecez-Kecmanovic (2010, June), op. cit., p. 136.
- [37] Thomas Mann (2005), op. cit., p. 102.
- [38] Philipp Lenssen interviewed by Stephan Spencer (2011) in *Google Power Search: The Essential Guide to Finding Anything Online with Google*. Sebastopol: O'Reilly, p. 44.
- [39] cf. Thomas Mann (2005), op. cit., p. 107.
- [40] cf. Lee Rainie (2010, May-June), op. cit., p. 313.
- [41] Eric Price (2011), op. cit., p. 455.