CHAPTER 5

# Academic Research

# Conducting Research

Research projects have all kinds of starting points. Sometimes we start them because a course instructor or an employer asks us to. At other times, we embark on research projects because we want to learn about something on our own. In all these cases, though, the research we undertake typically responds to a question or to a set of questions that we need to answer. These are called **research questions**. Constructing research questions and narrowing them to focus specifically on the relevant information needed to answer them is usually the first step in any research project, especially in an academic context.

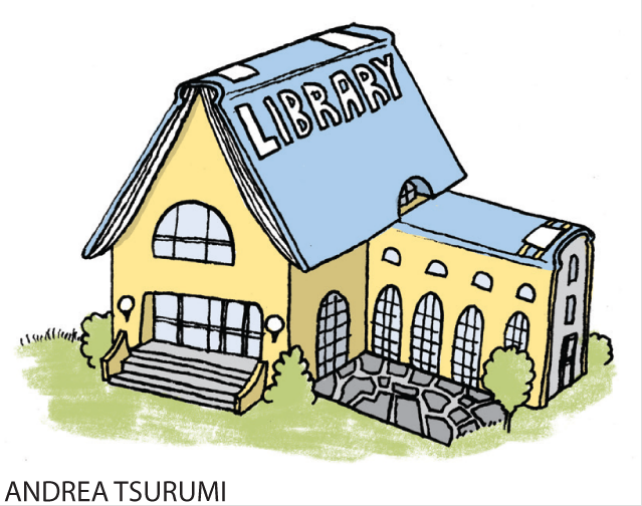


## DEVELOPING A RESEARCH QUESTION

For many students, choosing a subject to research can be incredibly difficult. Whenever you have free rein to choose the topic of a research project, one way to start is by thinking about issues that really matter to you. Writers tend to do their best work when writing about issues in which they have a personal investment. Even if you're conducting research in a course with a topic that has been assigned, you should always consider how you might approach the topic from an angle that matters to you or that brings in your unique point of view. Your personal investment and level of interest in the topic of your research can greatly impact the kinds of questions you ask of that topic, but they may also influence your level of commitment to, and the quality of, your research.

Another challenge many students face is narrowing down a solid research question once they've selected an issue of interest. If a research question is too broad, then it may not be feasible to respond to it adequately in the scope of your research assignment. If it's too narrow, though, it might not be researchable; in other words, you might not be able to find enough sources to support a solid position on the issue. A good research question has an appropriately narrow scope and can be answered with available resources in the space and time allowed to do so.

A focused question sometimes comes from reading previously published materials on a topic or issue. If you are able to review what others have already written on a topic before conducting a study or making an argument of your own on that topic, then you will know what still needs to be understood, explained, or debated. In this way, you may identify a gap in what is already known or understood about a topic in order to build a research question that, when answered, could help fill that gap. This is how researchers continue to contribute to ongoing conversations.



ANDREA TSURUMI

As you work on drafting a research question, keep these five criteria in mind:

- **Personal Investment** Is this an issue you care about? If the issue is too broad, is there a way you can narrow down the topic to an aspect of the issue that is of the most importance to you?
- **Debatable Subject** Could two reasonable people looking at evidence about this issue come to different conclusions?
- **Researchable Issue** Can you locate or collect adequate evidence to support a position on this issue?
- **Feasibility** Is the scope of the research question manageable, given the amount of time you have to research the issue and the amount of space in which you will make your argument?
- **Contribution** Will your response to your question contribute to the ongoing conversation about the issue?



## INSIDE WORK

### Writing a Research Question

As you begin your research project, you should identify a research question that will guide your research and keep you on track. Start by brainstorming a list of possible research questions for ten minutes, and then use the five criteria above to narrow down your list to a research question that might work for you. If your answer to any of the questions is a definitive "No," then the research question might not be a good choice, or you might need to revise it to make it work for your research project.



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*A political scientist emphasizes the importance of supporting evidence.*



# CHOOSING PRIMARY AND SECONDARY SOURCES

You can gather several different types of sources to respond to a research question. When considering sources to gather, you should look for those that provide specific evidence to address aspects of your

research question. Remember to keep your target audience in mind as you select evidence, taking into account the kinds of evidence that would likely be most convincing to your audience.

To respond to any research question, you must collect evidence to prove or disprove a hypothesis or to support or refute a claim. Once you have identified a solid research question, then you must decide whether you need to collect primary and/or secondary sources to support your research aims.

**Primary sources** include the results of data that researchers might collect on their own. If you're making a claim about how to interpret a work of art and you've studied the piece carefully for images and symbols that you discuss in your argument, for instance, then the work of art is your primary source. Or perhaps you've designed and conducted a survey of people's experiences with a particular social phenomenon, like culture shock. In this case, the results you've gathered from your survey are a primary source from which you can provide evidence to answer a research question or support an argument about the experience of culture shock. Other forms of primary sources include original historical documents and responses from interviews you may have conducted.



## INSIDER'S VIEW

### Primary research in writing studies

**MORIAH McCRACKEN,** WRITING STUDIES

Miller-Cochran et al., *An Insider's Guide to Academic Writing*, 2e, © 2019 Bedford/St. Martin's

"I like to try to introduce my students to qualitative research in their first year, when our students have to interview a professor. Sometimes I'll help them develop survey questions and questionnaires so they can have that kind of experience, and I'll teach them about double-entry notebooks so they can do some observations in the classroom. I like to bring in qualitative methods so that students realize there are different kinds of questions to ask, and depending on my question, I'm going to have to try something a little bit different and learn how to do this kind of research in my discipline."

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*Find additional advice on doing primary research.*

## INSIDE WORK

### Collecting Primary Evidence

Freewrite for five to ten minutes about a time in the past when you had to collect data on your own to answer a research question.

- Why were you collecting the data? What question were you trying to answer?
- What data did you collect, and how did you collect it? Did you observe something? Conduct a survey? Interview someone?
- If you were to try to answer that research question now, what data would you collect? Would you do anything differently? Why or why not?

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Based on the scope of your argument and the expectations of your audience, you may also need to engage **secondary sources**, or research collected by and/or commented on by others. Let's say that your literature professor wants you to offer an interpretation of a poem. You study the poem carefully as your primary source and arrive at a conclusion or claim about the work. But imagine that the assignment also requires you to use scholarly opinions to support your own position or interpretation. As a result, you spend time in the library or searching online databases to locate articles or books by scholars who provide their own interpretations or perspectives on the poem. The articles or books you rely on to support your interpretation are secondary sources because the interpretations were developed by others, commenting on the poem. Likewise, if you cite as part of your own argument the results of a survey published in an academic article, then that article serves as a secondary source of information to you. Other secondary sources include newspapers and magazines, textbooks, and encyclopedias. Many of the researched arguments you'll produce in college will require you to use both primary and secondary sources as support.

## INSIDE WORK

### Using Primary and Secondary Sources

Read Timothy Holtzhauser's ad analysis in Chapter 4. After reviewing his analysis, look at the list of works cited at the end of his essay. Then answer the following questions.

- What primary source(s) does Timothy use to support his argument? Why do you think he chooses the primary source(s) he does?
- What would the impact be if Timothy didn't use primary sources in his argument? Would his argument be more or less persuasive to his audience?
- What secondary sources does Timothy use to support his argument?

- Why do you think he chooses these particular secondary sources? What impact do they have on the development of his argument?
- If Timothy had only used primary sources and no secondary sources, what would the impact have been on the persuasiveness of his argument? ◗

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# SEARCHING FOR SOURCES

In Part Two, we discuss collecting primary sources to support claims in specific disciplinary areas or genres in more detail. In the rest of this chapter, though, we provide support for collecting secondary sources, which build a foundation for research and writing in academic contexts. Even if the main evidence used to support an academic research project comes from primary sources, secondary sources can provide an overview of what other scholars have already argued with regard to a particular issue or topic. Keep in mind that academic writing and research essentially comprise a series of extended conversations about different issues, and secondary sources help you understand what part of the conversation has already happened before you start researching a topic on your own, or before you consider entering an established conversation on a topic or issue.

## Identifying Search Terms

The school, college, or university you attend likely offers many avenues to help navigate the processes for conducting library research at your institution. Most of these processes include searching for source materials online. When you search for secondary sources online to support the development of a research study or to support a claim in an argument, it's important to consider your **search terms**, the key words and phrases you'll use while you're searching. Let's say that you're interested in understanding the effects of using cell phones while driving, a topic we explored in Chapter 4. In such a case, you might begin your research with a question that reads something like this:

> What are the effects of using cell phones while driving?

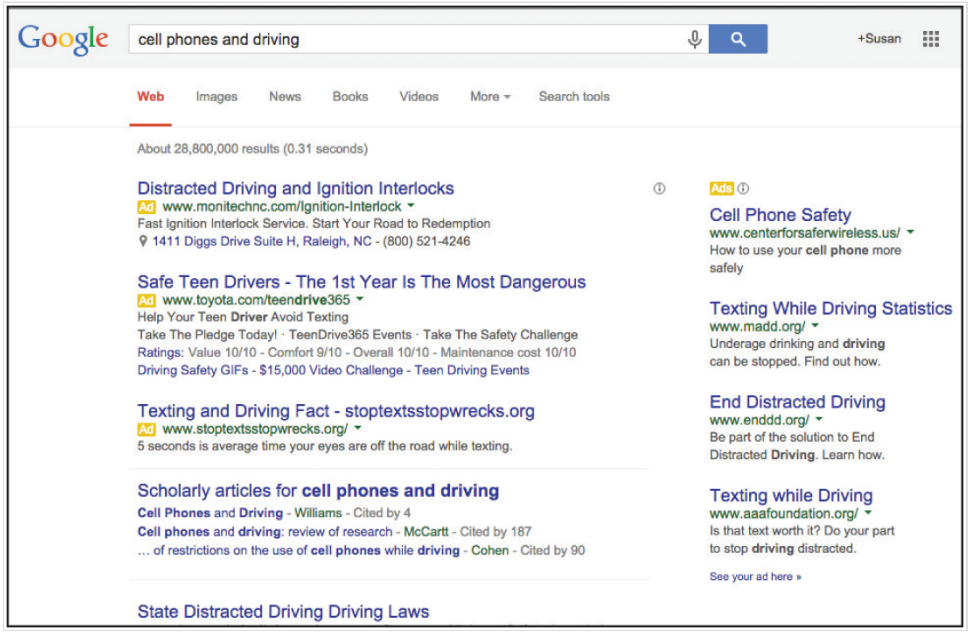
The first step in your research process would likely be to find out what others have already written about this issue. To start, then, you might temporarily rephrase your research question to ask:

> What have others written or argued about the effects of using cell phones while driving?

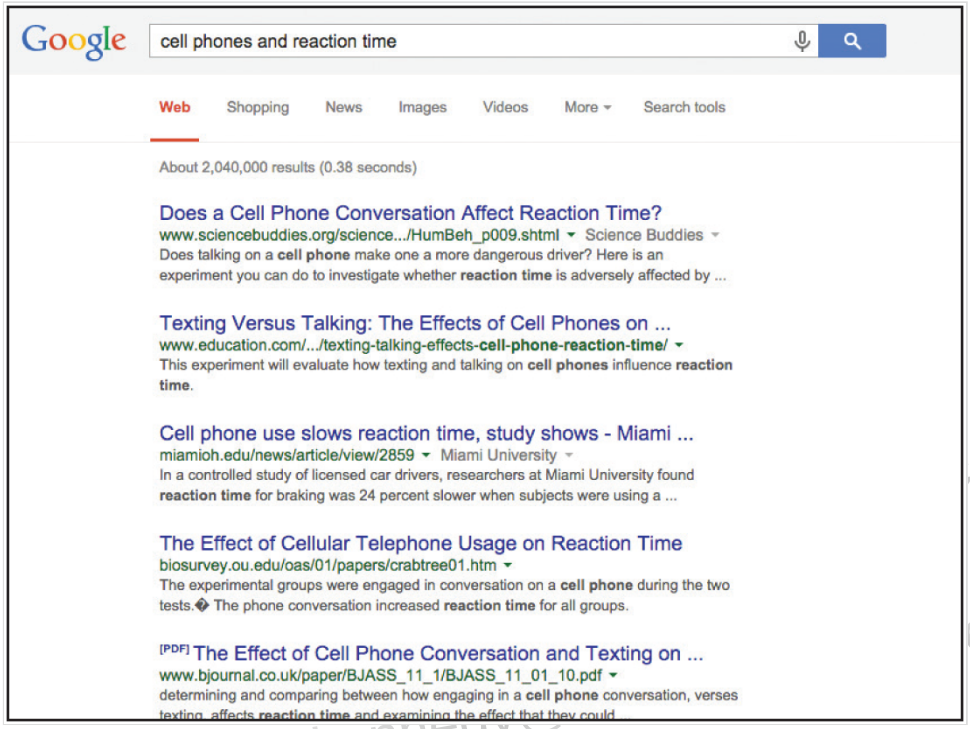
To respond, you'll need to identify the key terms of your question that will focus your search for secondary sources about the subject. You might highlight some of the key terms in the question:

> What have others written or argued about the effects of using **cell phones** while **driving**?

If you started your search by typing “cell phones and driving” into Google, your search would return millions of results:

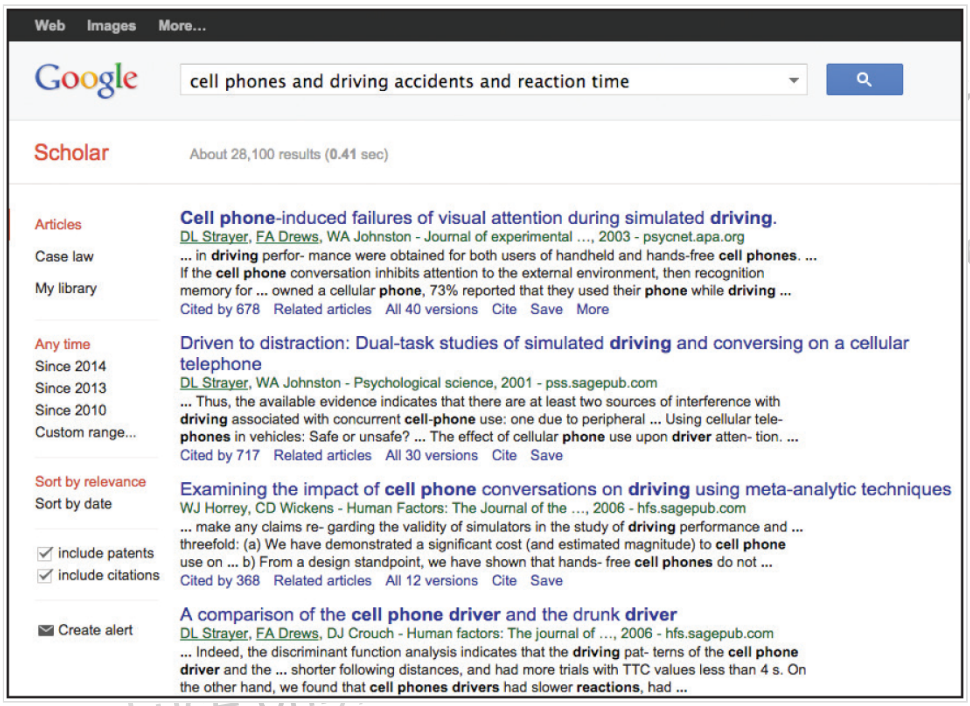



These results include links to images of people on cell phones in their cars, to news articles, and to statistics from insurance companies, to name a few. In the figure above, the first three items in the list and the ones in the sidebar are all sponsored advertisements. You might want to seek out non-sponsored links in the list. After careful evaluation, you may decide that some of these sources of data would be useful for your research, but you can also see that the results produce far too many hits to manage. There’s simply no way you can comb through the millions of hits to find information that is appropriate for your purposes. As a result, you may choose to narrow your search to something that emerges as a specific issue, like “reaction time.” If you narrowed your search to “cell phones and reaction time,” you would see results like this:



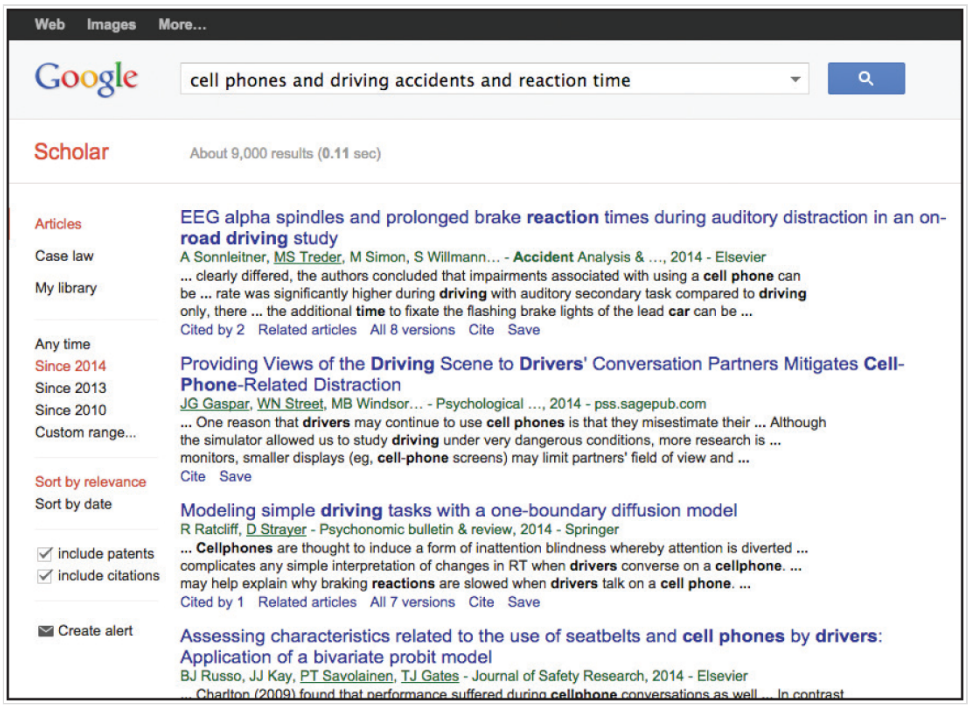

Focusing your research terms in this way narrows the scope of your search somewhat further, but you still have far too many results to review. One concern to keep in mind, then, is that basic Google searches are not very useful in helping to locate the kinds of sources you might rely on for your research, especially in an academic context. If you want to understand, more specifically, what scholars have written about your topic, then you need to find scholarly or academic sources as support. A basic Google search doesn't filter different kinds of sources, so it's not generally very helpful.

Instead, you might choose to search Google Scholar to understand the ongoing conversation among scholars about your topic. Conducting a search for "cell phones and driving accidents and reaction time" in Google Scholar returns tens of thousands of results:






If you take a close look at the left-hand side of the screen, however, you'll notice that you can limit your search in several additional ways. By limiting the search to sources published since 2014, you can reduce your results significantly:






You can continue refining your search until you end up with a more manageable number of hits to comb through. Although the number is still large, thousands of results are more manageable than millions. Of course, you would likely need to continue narrowing your results. As you conduct this narrowing process, you are simultaneously focusing in on the conversation you originally wanted to understand: what scholars

have written about your topic. Consider the criteria that would be most meaningful for your project as you refine your search by revising your search terms.

## INSIDE WORK

### Generating Search Terms

Think of a controversial social issue that interests you. We chose driving while using a cell phone, but you should choose something you would potentially be interested in learning more about. Then follow these instructions, preferably working with classmates.

- Brainstorm the search terms you would use for that topic. What terms would you enter into a web search engine?
- List your search terms in the box for Round 1 below, and then try doing a search using your preferred web search engine.
- How many hits did you get? Write the number in the box for Round 1.
- Switch seats with a classmate so that you can look at someone else's search terms. Should the search be narrowed? If so, revise your classmate's search terms to narrow them slightly. Write those in the box for Round 2. Try the search, and record the number of hits.
- Follow the instructions again for Rounds 3 and 4.

| | Search Terms | Number of Hits |
|---|---|---|
| **Round 1** | | |
| **Round 2** | | |
| **Round 3** | | |
| **Round 4** | | |

After you have finished the exercise, reflect on the following questions.

- How did your classmates narrow your search terms? What changes worked well, and what changes didn't work as well?
- If you were going to write advice for students using web search engines for research, what advice would you give about search terms?

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Keep in mind that general search engines such as Google are not always the best places to conduct academic research, although they can often be useful starting points. Experienced researchers generally rely on more specialized databases to find the kinds of sources that will support their research most effectively.

## Using Journal Databases

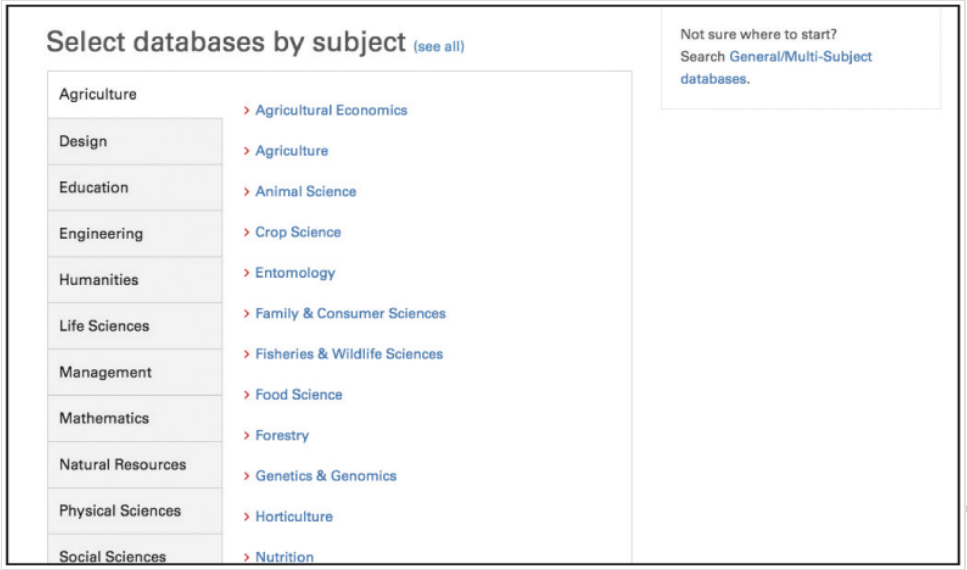
If you are conducting academic research, then one of the first types of sources you should look for is peer-reviewed journal articles. You may wonder why we don't recommend beginning your search by scouring your library's catalog for books. The answer is that academic books, which are often an excellent source of information, generally take much longer to make their way through the publishing process before they appear in libraries. Publishing the results of research in academic journal articles, however, is a faster method for academics to share their work with their scholarly communities. Academic journals, therefore, are a valuable resource precisely because they offer insight into the most current research being conducted in a field.

Additionally, like other scholarly work, most academic journals publish research only after it has undergone rigorous scrutiny through a peer-review process by other scholars in the relevant academic field. Work that has gone through the academic peer-review process has been sent out, with the authors' identifying information removed, and reviewed by other scholars who determine whether it makes a sufficiently significant contribution to the field to be published. Work published in a peer-reviewed academic journal has been approved not only by the journal's editor but also by other scholars in the field.

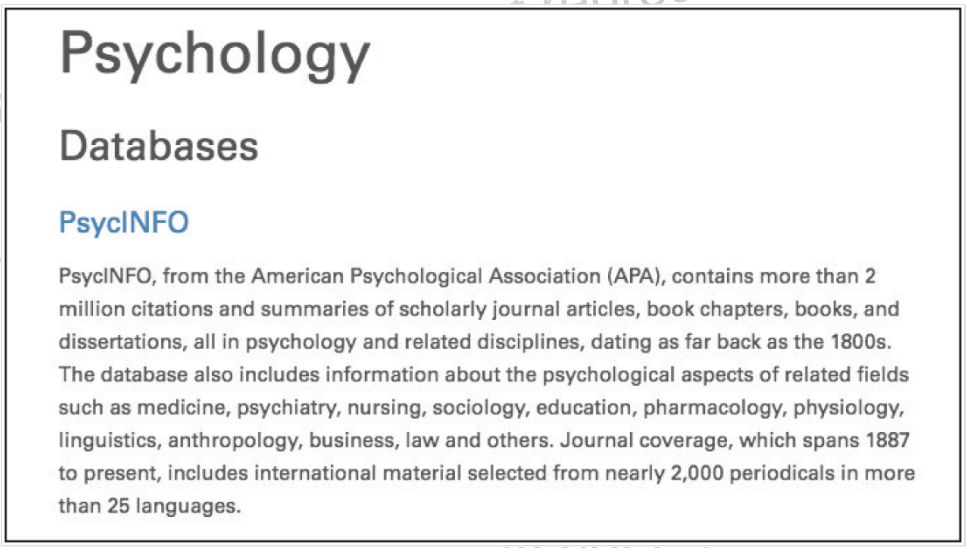
If you've ever browsed through your school's library, you've probably noticed that there are thousands of academic journals, and many are available online and easy to locate via the Internet. If you're associated with a college or university, you likely have access to a wide array of online academic journals that can be explored through databases via the library's website. You can search general library databases by refining search terms, as we discussed in the examples of using Google, but you can also find relevant resources by searching in specific disciplinary databases.

## Searching for Journal Articles by Discipline

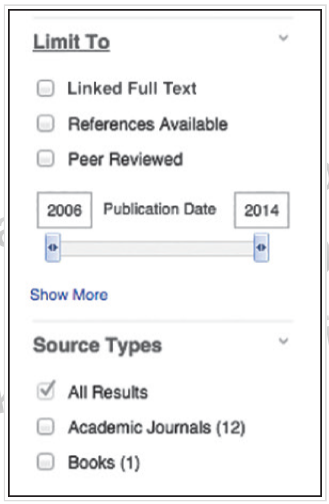
One way of searching for journal articles through your school's library is to explore the academic databases by subject or discipline. These databases usually break down the major fields of study into the many subfields that make up smaller disciplinary communities. Individual schools, colleges, and universities choose which databases they subscribe to. In the following image from the North Carolina State University's library website, you can see that agriculture is divided into various subfields: agricultural economics, animal science, crop science, and so on.



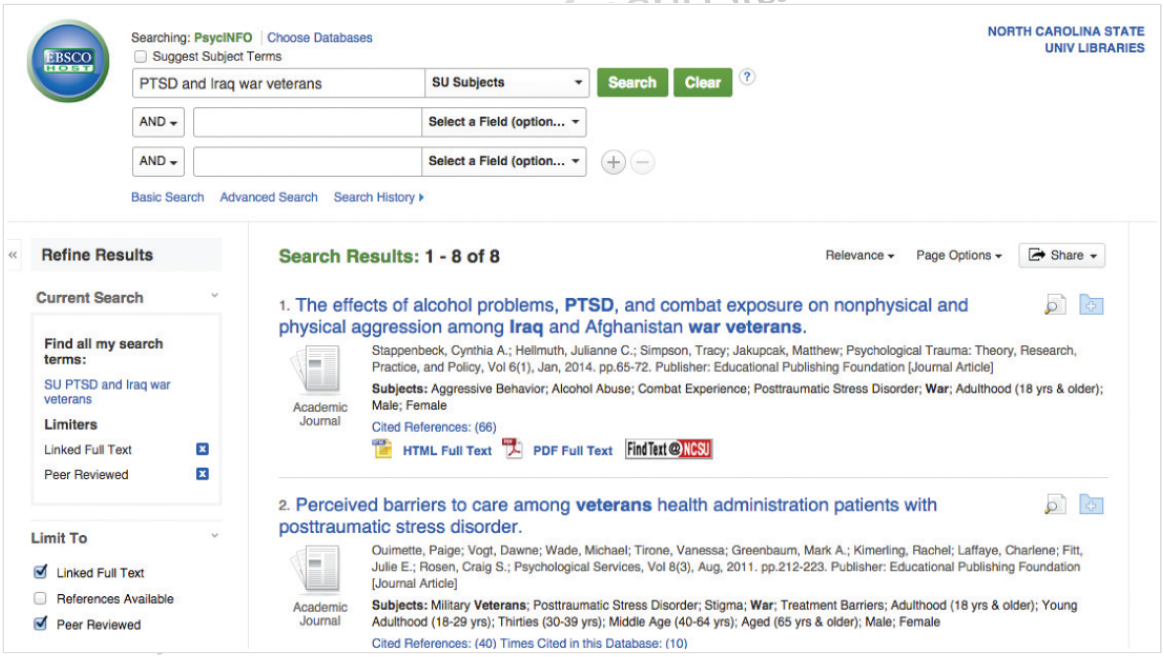

Let's say you need to find information on post-traumatic stress disorder (PTSD) among veterans of the Iraq War that began in March 2003. You spend some time considering the subfields of the social sciences where you're most likely to find research on PTSD: history, sociology, political science, and psychology, for instance. If you choose to focus on the psychological aspects of PTSD, then you would likely select "Social Sciences" and then "Psychology." When you select "Psychology" from the list of available disciplines, typically you'll see a screen that identifies major research databases in psychology, along with some related databases. Choosing the database at the top of the page, "PsycINFO," gains you access to one of the most comprehensive databases in that field of study.




Selecting "PsycINFO" grants access to the PsycINFO database via a search engine — in this case, EbscoHOST. You can now input search terms such as "PTSD and Iraq War veterans" to see your results.




Notice that the search engine allows you to refine your search in a number of ways, very similar to the criteria that you can use in Google Scholar: you can limit the years of publication for research articles, you can limit the search to sources that are available full-text online, you can limit the search to peer-reviewed journal articles, and more. If you limit your search for "PTSD and Iraq War veterans" to peer-reviewed journal articles available in full-text form online, then the results look something like this:




You can now access the texts of journal articles that you find interesting or that might be most relevant to your research purposes. Depending on the number and content of the results, you may choose to revise your search terms and run the search again.

## INSIDE WORK

### Generating Sources from an Academic Database

For this activity, use the same controversial social issue you relied on to complete the previous Inside Work activity, for which you generated and refined possible search terms to assess the number of hits, as possible sources, you could locate. This time, however, you should conduct your search using a more specialized academic database that is appropriate to your topic, such as PsycINFO or Sociological Abstracts. If you do not have access to such a database, then you may choose to use Google Scholar as an alternative.

Input each of the four sets of search terms generated in your previous Inside Work activity into the database and record the number of hits yielded. As you conduct your search, using each of the search terms, take a few minutes to peruse the kinds of results that are generated by each search.

| | Search Terms | Number of Hits |
|---|---|---|
| **Round 1** | | |
| **Round 2** | | |
| **Round 3** | | |
| **Round 4** | | |

After you have finished the exercise, reflect on the following questions:

- In what ways are the results of your academic database search similar to those you found from a web search engine? In what ways are the results different?
- Which of your search terms yielded the highest and lowest number of hits? How do these results compare to your previous results? What factors, besides using different terms, could account for any difference in the results?
- If you were going to write advice for students using academic databases to locate sources for a research project, what advice would you give them?

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# EVALUATING SOURCES

## Distinguishing between Scholarly and Popular Sources

Using search engines to find relevant sources is fairly easy. The difficult part is deciding which sources are worth your time. If you are working on an academic paper, it is particularly useful to be able to distinguish between popular and scholarly sources.

### INSIDER'S VIEW

**On distinguishing scholarly sources**

**JONATHAN MORRIS**, POLITICAL SCIENCE

Miller-Cochran et al., *An Insider's Guide to Academic Writing*, 2e, © 2019 Bedford/St. Martin's

"We have to teach our students what's scholarly literature and what isn't. Peer-review journal articles, books — that's scholarly literature. When you pull things off of Wikipedia, when you go even to newspaper articles from the *New York Times* — that's not scholarly research. They need to know that differentiation."

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*Get expert advice on finding scholarly sources.*



Depending on your research and writing context, you might be able to use both scholarly and popular sources to support your research. However, in some writing situations it is most appropriate to rely primarily on scholarly sources. For this reason, you should understand the difference between scholarly and popular sources, which comes down to a matter of audience and the publication process. **Scholarly sources** are produced for an audience of other scholars, and **popular sources** are produced for a general audience. Scholarly sources have undergone a peer-review process prior to publication, while popular sources typically have been vetted only by an editor. Generally speaking, popular sources are not very useful for supporting academic research. Let's examine a number of publication types in terms of the kind of information, scholarly or popular, they most often provide:



**Examples of Scholarly Sources**

- **Academic Journals** Most journal articles are produced for an audience of other scholars, and the vast majority are peer-reviewed before they are published in academic journals.
- **Books Published by Academic Presses** Academic presses publish books that also go through the peer-review process. You can sometimes identify academic presses by their names (e.g., a university press), but sometimes you need to dig deeper to find out whether a press generally publishes scholarly or popular sources. Looking at the press's website can often help answer that question.

**Examples of Popular Sources**

- **Newspapers** Most newspaper articles are reviewed by editors for accuracy and reliability. However, they typically provide only information that would be of interest to a general audience. They are not specifically intended for an academic audience. A newspaper might report the results of a study published in an academic journal, but it will generally not publish original academic research.
- **Magazines** Like newspaper articles, magazine articles are typically reviewed by editors and are intended for a general reading audience, not an academic one.

Although it may seem easy to classify sources into one of these two categories, in fact it is often difficult to determine if a source is scholarly or not. Understanding the nature of scholarly and popular sources and recognizing their differences as you conduct your research will help you develop more effective arguments.

Scholarly works, for instance, are typically built on other sources, so they generally include references to other works that are documented in the text and listed in a complete bibliography at the end. Imagine for a moment, though, that you locate a study published on the Internet that you think would be a really good source for your research. It looks just like an article that might appear in a journal, and it has a bibliography that includes other academic sources. However, as part of your analysis of the source, you discover that the article, published only on a website, has never been published by a journal. Is this a scholarly work? It might be. Could this still be a useful scholarly work for your purposes? Perhaps. Still, as a writer and researcher, you would need to know that the article you're using as part of your own research has never been peer-reviewed or published by a journal or an academic press. This means that the validity of the work has never been assessed by other experts in the field. If you use the source in your own work, you would probably want to indicate that it has never been peer-reviewed or published in an academic journal as part of your discussion of that source.

Answering the following questions about your sources can help you evaluate their credibility and reliability:

1. Who are the authors?
2. Who is the intended audience?
3. Where is the work published?
4. Does the work rely on other reputable sources for information?
5. Does the work seem biased?

As a writer, you must ultimately make the decisions about what is or is not an appropriate source, based on your goals and an analysis of your audience. Answering the questions above can help you assess the

appropriateness of sources.

### INSIDE WORK

#### Evaluating Sources

For this exercise, either look at the sample essay from Timothy Holtzhauser in Chapter 4 or look at an essay that you wrote for a class in the past. Choose one of the references listed in the essay's bibliography, and write answers to the following questions.

- Who are the authors? Do they possess any particular credentials that make them experts on the topic? With what institutions or organizations are the authors associated?
- Who is the intended audience — the general public or a group of scholars? How do you know?
- Where is the work published? Do works published there undergo a peer-review process?
- Does the work rely on other reputable sources for information? What are those sources, and how do you know they are reputable?
- Does the work seem biased? How do you know this? Is the work funded or supported by individuals or parties who might have a vested interest in the results? If so, is there a potential conflict of interest?

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# SUMMARIZING, PARAPHRASING, AND QUOTING FROM SOURCES

Once you've located and studied the sources you want to use in a research paper, then you're ready to begin considering ways to integrate that material into your own work. There are a number of ways to integrate the words and ideas of others into your research, and you've likely already had experience summarizing, paraphrasing, and quoting from sources as part of an academic writing assignment. For many students, though, the specifics of how to summarize, paraphrase, and quote accurately are often unclear, so we'll walk through these processes in some detail.

## Summarizing

**Summarizing** a text is a way of condensing the work to its main ideas. A summary therefore requires you to choose the most important elements of a text and to answer these questions: *What* is this work really trying to say, and *how* does it say it? Composing a summary of a source can be valuable for a number