

Tip Sheet 1. Primary Sources

In its Primary Source Project, the Library of Congress defines a “primary source” as an original document or object, created by a person who lived in a particular time and place in history. This definition coincides closely with the meaning of a primary source for all disciplines, including science and journalism. *It is important to note that the final form of the document in science also contributes to whether it is considered a primary source.*

A primary source in scientific writing is the article published in a peer-reviewed journal and written by the authors who designed the experiment and did the work to collect and analyze the data. In science, the writer of the published journal article has first-hand knowledge, has created the knowledge, has had that article reviewed by peers at a particular time and by editors at the time of publication. Because the ethics of scientific publication require that the journal article contains knowledge only published once, this journal article is **the** primary source. Synoptics are concisely written (1-2 pages) complete articles that are simultaneously peer-reviewed with the full paper then published in a primary journal; the full article should be cited in future publications.

Secondary sources in science derive their information from primary sources because journal articles are the first report of a scientific finding. An article quoting a primary source is itself a secondary source: its author is quoting the original researcher. Secondary sources often interpret primary sources, which is the reason review papers are considered secondary sources in science. Secondary sources are derivative works. Primary sources in scientific writing become secondary sources in science writing.

Tertiary sources in science are collections of secondary and primary source material. Most disciplines agree on what constitutes a tertiary source.

Type of writing	Primary sources	Secondary sources	Tertiary sources
Scientific writing	<ul style="list-style-type: none"> Articles published in peer-reviewed journals Synoptics published in peer-reviewed journals Data (obtained by the author of the primary journal article and available via an accessible archive, i.e., “published”) Laboratory notebooks (as chain of evidence only) 	<ul style="list-style-type: none"> Abstracts Books, book reviews Data (secondary use of primary data) Posters Letters and Editorials Review articles in peer-reviewed journals Proceedings of meetings Photographs 	<ul style="list-style-type: none"> Almanacs Bibliographies (also considered secondary) Chronologies Dictionaries and Encyclopedias (also considered secondary) Directories Fact books Guidebooks Indexes, abstracts, bibliographies used to locate primary and secondary sources Manuals Textbooks (also be secondary)
Science writing (journalism)	<ul style="list-style-type: none"> Diaries Interviews (e.g., oral histories, telephone, e-mail) Letters 	<ul style="list-style-type: none"> Audio recordings Journal, magazine, newspaper articles Video recordings 	
Other disciplines	<ul style="list-style-type: none"> Artifacts (e.g. coins, plant specimens, fossils, furniture, tools, clothing, all from the time under study) Internet communications on email, listservs Original personal documents and papers Patents Photographs Proceedings of Meetings, conferences and symposia Records of organizations, government agencies (e.g. annual report, treaty, constitution, government document) Speeches Survey Research Video recordings (e.g. television programs) Works of art, architecture, literature, and music 	<ul style="list-style-type: none"> Bibliographies (also considered tertiary) Biographical works Commentaries, criticisms Histories Magazine and newspaper articles (this distinction varies by discipline) Monographs, other than fiction and autobiography Textbooks (also considered tertiary) Web site (also considered primary) 	

