6.2: Defining Evidence

What is evidence? According to Reike and Sillars, "Evidence refers to specific instances, statistics, and testimony, when they support a claim in such a way as to cause the decision maker(s) to grant adherence to that claim." ¹

Evidence is information that answers the question “How do you know?” of a contention you have made. Please take that question very literally. It is often hard to tell the difference at first between telling someone what you know and telling them how you know it. To become an effective arguer in almost any context, you need to be able to ask this question repeatedly and test the answers you hear to determine the strength of the evidence.

Only experts can use phrases like "I think" or "I feel" or "I believe" as they have the qualifications needed that allow you to accept their observations. As for everyone else, we need to use evidence to support our arguments. As a critical thinker, you should rely much more on what a person can prove instead of what a person "feels."

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Evidence is a term commonly used to describe the supporting material used when persuading others. Evidence gives an objective support to your arguments, and makes your arguments more than a mere collection of personal opinions or prejudices. No longer are you saying, “I believe” or “I think” or “In my opinion.” Now you can support your assertions with evidence. Because you are asking your audience to take a risk when you attempt to persuade them, audiences will demand support for your assertions. Evidence needs to be carefully chosen to serve the needs of the claim and to reach the target audience.

An argument is designed to persuade a resistant audience to accept a claim via the presentation of evidence for the contentions being argued. Evidence establishes the amount of accuracy your arguments have. Evidence is one element of proof (the second is reasoning), that is used as a means of moving your audience toward the threshold necessary for them to grant adherence to your arguments.

Quality argumentation depends in part on the quantity and diversity of evidence. The arguer should expect audiences to not be persuaded by limited evidence or by a lack of variety/scope, evidence drawn from only one source as opposed to diverse sources. On the other hand, too much evidence, particularly when not carefully crafted, may leave the audience overwhelmed and without focus. Evidence in support of the different contentions in the argument needs to make the argument reasonable enough to be accepted by the target audience.

**Challenge of Too Much Evidence**

I attended a lecture years ago where the guest speaker told us that we have access to more information in one edition of the New York Times than a man in the middle ages had in his entire life time. The challenge is not finding information, the challenge is sorting through information to find quality evidence to use in our arguments and decision-making. In his book, “Data Smog, Surviving the Information Glut”, David Shenk expresses his concern in the first chapter:

> “Information has also become a lot cheaper--to produce, to manipulate, to disseminate. All of this has made us information-rich, empowering Americans with the blessings of applied knowledge. It has also, though, unleashed the potential of information-gluttony...How much of the information in our midst is useful, and how much of it gets in the way? ... As we have accrued more and more of it, information has emerged not only as a currency, but also as a pollutant.”

- In 1971 the average American was targeted by at least 560 daily advertising messages. Twenty years later, that number had risen six-fold, to 3,000 messages per day.
- In the office, an average of 60 percent of each person's time is now spent processing documents.
- Paper consumption per capita in the United States tripled from 1940 to 1980 (from 200 to 600 pounds), and tripled again from 1980 to 1990 (to 1,800 pounds).
- In the 1980s, third-class mail (used to send publications) grew thirteen times faster than population growth.
- Two-thirds of business managers surveyed report tension with colleagues, loss of job satisfaction and strained personal relationships as a result of information overload.
- More than 1,000 telemarketing companies employ four million Americans, and generate $650 billion in annual sales.
Let us call this unexpected, unwelcome part of our atmosphere "data smog," an expression for the noxious muck and druck of the information age. Data smog gets in the way; it crowds out quiet moments, and obstructs much-needed contemplation. It spoils conversation, literature, and even entertainment. It thwarts skepticism, rendering us less sophisticated as consumers and citizens. It stresses us out."  

We need ways of sorting through this information and the first method is understanding the different types of evidence that we encounter.

Sources of Evidence

The first aspect of evidence we need to explore is the actual source of evidence or where we find evidence. There are two primary sources of evidence; primary and secondary.

Primary Sources

A primary source provides direct or firsthand evidence about an event, object, person, or work of art. Primary sources include historical and legal documents, eyewitness accounts, results of experiments, statistical data, pieces of creative writing, audio and video recordings, speeches, and art objects. Interviews, surveys, fieldwork, and Internet communications via email, blogs, tweets, and newsgroups are also primary sources. In the natural and social sciences, primary sources are often empirical studies—research where an experiment was performed or a direct observation was made. The results of empirical studies are typically found in scholarly articles or papers delivered at conferences.

Included in primary sources:

- Original, first-hand accounts of events, activity or time period
- Factual accounts instead of interpretations of accounts or experiments
- Results of an experiment
- Reports of scientific discoveries
- Results of scientifically based polls

Secondary Sources

Secondary sources describe, discuss, interpret, comment upon, analyze, evaluate, summarize, and process primary sources. Secondary source materials can be articles in newspapers or popular magazines, book or movie reviews, or articles found in scholarly journals that discuss or evaluate someone else's original research.

Included in secondary sources:

- Analyzation and interpretation of the accounts of primary sources
- Secondhand account of an activity or historical event
- Analyzation and interpretation of scientific or social research results
The key difference between the two sources is how far the author of the evidence is removed from the original event. You want to ask, "Is the author giving you a firsthand account, or a secondhand account?"

Types of Evidence

There are five types of evidence critical thinkers can use to support their arguments: precedent evidence, statistical evidence, testimonial evidence, hearsay evidence, and common knowledge evidence.

Precedent evidence is an act or event which establishes expectations for future conduct. There are two forms of precedent evidence: legal and personal.

Legal precedent is one of the most powerful and most difficult types of evidence to challenge. Courts establish legal precedent. Once a court makes a ruling, that ruling becomes the legal principle upon which other courts base their actions. Legislatures can also establish precedent through the laws they pass and the laws they choose not to pass. Once a principle of law has been established by a legislative body, it is very difficult to reverse.

Personal precedents are the habits and traditions you maintain. They occur as a result of watching the personal actions of others in order to understand the expectations for future behaviors. Younger children in a family watch how the older children are treated in order to see what precedents are being established. Newly employed on a job watch to see what older workers do in terms of breaks and lunchtime in order that their actions may be consistent. The first months of a marriage is essentially a time to establish precedent. Who does the cooking, who takes out the garbage, who cleans, which side of the bed does each person get, are precedents established early in a marriage. Once these precedents are displayed, an expectation of the other’s behavior is established. Such precedent is very difficult to alter.

To use either type of precedent as evidence, the arguer refers to how the past event relates to the current situation. In a legal situation, the argument is that the ruling in the current case should be the same as it was in the past, because they represent similar situations. In a personal situation, if you were allowed to stay out all night by your parents "just once," you can use that "just once" as precedent evidence when asking that your curfew be abolished.

Statistical evidence consists primarily of polls, surveys, and experimental results from the laboratory. This type of evidence is the numerical reporting of specific instances. Statistical evidence provides a means for communicating a large number of specific instances without citing each one. Statistics can be manipulated and misused to make the point of the particular advocate.

Don’t accept statistics just because they are numbers. People often fall into the trap of believing whatever a number says, because numbers seem accurate. Statistics are the product of a process subject to human prejudice, bias, and error. Questions on a survey can be biased, the people surveyed can be selectively chosen, comparisons may be made of non-comparable items, and reports of findings can be slanted. Take a look at all the polls that predict an election outcome. You will find variances and differences in the results.

Statistics have to be interpreted. In a debate over the use of lie detector tests to determine guilt or innocence in court, the pro-side cited a study which found that 98% of lie detector tests were accurate. The pro-side interpreted this to mean that lie detector tests were an effective means for determining guilt or innocence. However, the con-side interpreted the statistic to mean that two out of every 100 defendants in this country would be found guilty and punished for a crime they
did not commit.

6.2.2: "Scully" by Floatjon is licensed under CC BY-SA 3.0

The great baseball announcer Vin Scully once described the misuse of statistics by a journalist by saying that “He uses statistics like a drunk uses a lamppost, not for illumination but for support”

Statistics are often no more reliable than other forms of evidence, although people often think they are. Advocates need to carefully analyze how they use statistics when attempting to persuade others. Likewise, the audience needs to question statistics that don’t make sense to them.

Testimonial evidence is used for the purpose of assigning motives, assessing responsibilities, and verifying actions for past, present and future events. Testimony is an opinion of reality as stated by another person. There are three forms of testimonial evidence: eyewitness, expert-witness, and historiography.

Eyewitness testimony is a personal declaration as to the accuracy of an event. That is, the person actually saw an event take place and is willing to bear witness to that event. Studies have confirmed that eyewitness testimony, even with all of its problems, is a powerful form of evidence. There seems to be almost something “magical” about a person swearing to “tell the whole truth and nothing but the truth.”

Expert-witness evidence calls upon someone qualified to make a personal declaration about the nature of the fact in question. Courts of law make use of experts in such fields as forensics, ballistics, and psychology. The critical thinker uses the credibility of another person to support an argument through statements about the facts or opinions of the situation.

What or who qualifies as an expert witness? Does being a former military officer make them an expert in military tactics? Often an advocate will merely pick someone who they know the audience will accept. But as an audience we should demand that advocates justify the expertise of their witness. As we acquire more knowledge, our standards of what constitutes an expert should rise. We need to make a distinction between sources that are simply credible like well-known athletes and entertainers that urge you to buy a particular product, and those who really have the qualities that allow them to make a judgment about a subject in the argumentative environment.
Although expert witness testimony is an important source of evidence, such experts can disagree. In a recent House Energy and Commerce subcommittee, two experts gave opposite testimony, on the same day, on a bill calling for a label on all aspirin containers warning of the drug's often fatal link to Reye's Syndrome. The head of the American Academy of Pediatrics gave testimony supporting the link, but Dr. Joseph White, President of The Aspirin Foundation of America, said there was insufficient evidence linking aspirin to Reye's syndrome.

**Historiography** is the third form of testimonial evidence. In their book, ARGUMENTATION AND ADVOCACY, Windes and Hastings write, "Historiographers are concerned in large part with the discovery, use, and verification of evidence. The historian traces influences, assigns motives, evaluates roles, allocates responsibilities, and juxtaposes events in an attempt to reconstruct the past. That reconstruction is no wiser, no more accurate or dependable than the dependability of the evidence the historian uses for his reconstruction."

Keep in mind that there are many different ways of determining how history happens. Remember, historians may disagree over why almost any event happened. In the search for how things happen, we get ideas about how to understand our present world's events and what to do about them, if anything.

Primary sources are essential to the study of history. They are the basis for what we know about the distant past and the recent past. Historians must depend on other evidence from the era to determine who said what, who did what, and why.

How successful is the historian in recreating "objective reality?" As noted historian Arthur Schlesinger, Jr. says,

> "The sad fact is that, in many cases, the basic evidence for the historian's reconstruction of the really hard cases does not exist, and the evidence that does exist is often incomplete, misleading, or erroneous. Yet, it is the character of the evidence which establishes the framework within which he writes. He cannot imagine scenes for which he has no citation, invent dialogue for which he has no text, assume relationships for which he has no warrant."

Historical reconstruction must be done by a qualified individual to be classified as historical evidence. Critical thinkers will find it useful to consider the following three criteria for evaluating historical evidence.

- Around 1,000 books are published internationally every day and the total of all printed knowledge doubles every 5 years.
- More information is estimated to have been produced in the last 30 years than in the previous 5,000.

---The Reuters Guide to Good Information Strategy 2000

**Was the author an eyewitness to what is being described, or is the author considered an authority on the subject?** Eyewitness accounts can be the most objective and valuable but they may also be tainted with bias. If the author professes to be an authority, he/she should present his/her qualifications.

**Does the author have a hidden agenda?** The author may purposely or unwittingly tell only part of the story. The excerpt may seem to be a straight-forward account of the situation, yet the author has selected certain facts, details, and language, which advance professional, personal or political goals or beliefs. They may be factual, but the hidden agenda
of these books was to make money for the author, or get even with those in the administration they didn't like.

**Does the author have a bias?** The author's views may be based on personal prejudice rather than a reasoned conclusion based on facts. Critical thinkers need to notice when the author uses exaggerated language, fails to acknowledge, or dismisses his or her opponents' arguments. Historians may have biases based on their political allegiance. Conservative historians would view events differently than a liberal historian. It is important to know the **political persuasion** of the historian in order to determine the extent of bias he or she might have on the specific topic they are writing about.

"6.2.3: "Daniel Boorstin" by Unknown is in the Public Domain, CC0"

Sometimes we think we might know our history, but Historian Daniel Boorstin puts a perspective on the ultimate validity and accuracy of historical testimony when he writes, "Education is learning what you didn't even know you didn't know." Modern techniques of preserving data should make the task of recreating the past easier and adding to our education.

**Hearsay evidence** (also called rumor or gossip evidence) can be defined as an assertion or set of assertions widely repeated from person to person, though its accuracy is unconfirmed by firsthand observation. "Rumor is not always wrong," wrote Tacitus, the Roman historian. A given rumor may be spontaneous or premeditated in origin. It may consist of opinion represented as fact, a nugget of accuracy garbled or misrepresented to the point of falsehood, exaggerations, or outright, intentional lies. Yet, hearsay may well be the "best available evidence" in certain situations where the original source of the information cannot be produced.

Rumor, gossip or hearsay evidence carries proportionately higher risks of distortion and error than other types of evidence. However, outside the courtroom, it can be as effective as any other form of evidence in proving your point. Large companies often rely on this type of evidence, because they lack the capability to deliver other types of evidence.
A recent rumor was started that actor Morgan Freeman had died. A page on “Facebook” was created and soon gained more than 60,000 followers, after it was announced that the actor had passed away. Many left their condolences and messages of tribute. Only one problem, Morgan Freeman was very much alive, actually that is not so much a problem, especially to Morgan Freeman. The Internet is a very effective tool when it comes to spreading rumors.

**Common knowledge evidence** is also a way to support one’s arguments. This type of evidence is most useful in providing support for arguments which lack any real controversy. Many claims are supported by evidence that comes as no particular surprise to anyone.

Basing an argument on common knowledge is the easiest method of securing belief in an idea, because an audience will accept it without further challenge. As Communication Professors Patterson and Zarefsky explain:

> “Many argumentative claims we make are based on knowledge generally accepted by most people as true. For example, if you claimed that millions of Americans watch television each day, the claim would probably be accepted without evidence. Nor would you need to cite opinions or survey results to get most people to accept the statement that millions of people smoke cigarettes.”

**6 Patterson, 1983**

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**Credibility of Evidence or How Good Is It?**

In order to tell us how you know something, you need to tell us where the information came from. If you personally observed the case you are telling us about, you need to tell us that you observed it, and when and where. If you read about it, you need to tell us where you read about it. If you are accepting the testimony of an expert, you need to tell us who the expert is and why she is an expert in this field. The specific identity, name or position and qualifications of your sources are part of the answer to the question “How do you know?” You need to give your audience that information.

Keep in mind that it is the person, the individual human being, who wrote an article or expressed an idea who brings authority to the claim. Sometimes that authority may be reinforced by the publication in which the claim appeared, sometimes not. But when you quote or paraphrase a source you are quoting or paraphrasing the author, not the magazine or journal. The credibility of the evidence you use can be enhanced by:

**Specific Reference to Source**: Does the advocate indicate the particular individual or group making the statements used for evidence? Does the advocate tell you enough about the source that you could easily find it yourself?

**Qualifications of the Source**: Does the advocate give you reason to believe that the source is competent and well-informed in the area in question?

**Bias of the Source**: Even if an expert, is the source likely to be biased on the topic? Could we easily predict the source’s position merely from knowledge of his job, her political party, or organizations he or she works for?

**Factual Support**: Does the source offer factual support for the position taken or simply state personal opinions as fact?

**Evaluating Internet Sources of Evidence**

We currently obtain a significant amount of the evidence we use in an argument from the Internet. Some people are still under the influence that if they read it on the Internet, it must be accurate. But we all know that some Internet sources...
are better than others. We need to be able to evaluate websites to obtain the best information possible. Here are two approaches to evaluating websites

**Who, What, When, Where, and Why**

This first test is based on the traditional 5 “W’s.” These questions, like critical thinking, go back to Greek and Roman times. The notable Roman, Cicero, who was in office in 63 BC, is credited with asking these questions. Journalists are taught to answer these five questions when writing an article for publication. To provide an accurate interpretation of events to their viewers or readers, they ask these five questions and we can ask the same questions to begin discovering the level of quality of an online source.

**Who** wrote the post? What are their qualifications?

**What** is actually being said in the website. How accurate is the content?

**When** was the website’s latest post?

**Where** is the source of the post? Does the URL suggest it is from an academic source or an individual?

**Why** is the website published? Is the website there to inform or entertain?

There is a second method of evaluating websites that is more popular and includes a more in depth analysis. This method is known as the CRAAP test.

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**The C.R.A.A.P. Test**

C.R.A.A.P. is an acronym standing for Currency, Relevance, Authority, Accuracy, and Purpose. Developed by the Meriam Library at the California State University at Chico, each of these five areas is used to evaluate websites.

**Currency** How recent is this website. If you are conducting research on some historical subject a web site that has no recent additions could be useful. If, however you are researching some current news story, or technology, or scientific topic, you will want a site that has been recently updated.

Questions to Ask:

- When was the content of the website published or posted?
- Has the information been revised or updated recently?
- Have more recent articles on your subject been published?
- Does your topic require the most current information possible, or will older posts and sources be acceptable?
- Are the web links included in the website functional?

**Relevance** This test of a website asks you how important is the information to the specific topic you are researching. You will want to determine if you are the intended audience and if the information provided fits your research needs.

Questions to Ask:
• Does the content relate to your research topic or the question you are answering?
• Who is the intended audience?
• Is the information at an appropriate level for the purpose of your work? In other words, is it college level or targeted to a younger or less educated audience?
• Have you compared this site to a variety of other resources?
• Would you be comfortable citing this source in your research project?

Authority Here we determine if the source of the website has the credentials to write on the subject which makes you feel comfortable in using the content. If you are looking for an accurate interpretation of news events, you will want to know if the author of the website is a qualified journalist or a random individual reposting content.

Questions to Ask:

• Who is the author/ publisher/ source/ sponsor of the website?
• What are the author’s credentials or organizational affiliations?
• Does the author have the qualifications to write on this particular topic?
• Can you find information about the author from reference sources or the Internet?
• Is the author quoted or referred to on other respected sources or websites?
• Is there contact information, such as a publisher or email address?
• Does the URL reveal anything about the author or source?

Accuracy In this test we attempt to determine the reliability and accuracy of the content of the website. You need to determine if you can trust the information presented in the website or is it just slanted, personal beliefs.

Questions to Ask:

• Where does the information in the website come from?
• Is the information supported by Evidence, or is it just opinion?
• Has the information presented been reviewed by qualified sources?
• Can you verify any of the content in another source or personal knowledge?
• Are there statements in the website you know to be false?
• Does the language or tone used in the website appear unbiased or free of emotion or loaded language?
• Are there spelling, grammar or typographical errors in the content of the website?

Purpose Finally we examine the purpose of the website. We need to determine if the website was created to inform, entertain or even sell a product or service. If we want accurate, high quality evidence, we would want to avoid a site that is trying to sell us something. Although a company selling solar power may have some factual information about solar energy on their site, the site is geared to sell you their product. The information they provide is not there to educate you with all aspects of solar power.

Questions to Ask:

• What is the purpose of the content of this website? Is the purpose to inform, teach, sell, entertain or persuade?
• Do the authors/sponsors of the website make their intentions or purpose clear?
• Is the content in the website considered facts, opinion, or even propaganda?
• Does the point of view appear objective and impartial?
• Does the author omit important facts or data that might disprove the claim being made in the post?
• Are alternative points of view presented?
• Does the content of the website contain political, ideological, cultural, religious, institutional or personal biases?

Questions used here are inspired from questions from the Meriam Library at California State University Chico, the University of Maryland University College Library and Creighton University Library

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