Argumentative Research: Enhancing the Art of Rhetoric with Evidence

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FIGURE 12.1 In 2008, a protestor in London's Parliament Square uses researched evidence to support their claim against the Iraq War (2003–2011). On the sign, the protestor cites several statistics. Numerical data, such as statistics, is evidence that helps persuade an audience. (credit: "Iraq War Protesters in Parliament Square" by ljanderson977/Wikimedia Commons, Public Domain)

CHAPTER OUTLINE

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INTRODUCTION The term **research** is used widely and regularly and may have different—sometimes contradictory—meanings. Therefore, it is important to clarify what research is, why it is a key tool for academic success, and how using research-based evidence can enhance a writer's rhetorical abilities and effectiveness.

No matter what academic subjects you study, at some point you will need to conduct research. Although research is an integral part of all disciplines, even those primarily related to art or performance, the product of the research will vary. Even if your coursework does not require formal, documented research, it will, at minimum, include regular **research behaviors**. Every day, whether deciding which movie to watch or

choosing a new technology product, everyone participates in basic, informal research behaviors: a process of seeking information, testing it against other forms of collected information, and analyzing as much "data" as possible before making decisions or being persuaded. Although more formal, the same process applies to academic writing. You may be required to conduct research, gather evidence (data), and present your ideas and findings in a range of genres.

Like all communication, conducting and citing research is rhetorically situated and thus has a **purpose**, the reason or goal for the research; an **audience**, the recipient of the research findings; a **genre**, the structure of reported research; a **stance**, the position, or viewpoint, supported by research; a **context**, the situation in which the research or subject occurs; and a **culture**, the groups of people who share common beliefs and lived experiences, reflected by the author, audience, and subject. Furthermore, the researcher uses effective rhetorical strategies, such as reasoning supported by evidence. Therefore, it is important to match your research to the elements of the **rhetorical situation**, as indicated. For example, for a political science course, you may find that current unrest on campus regarding politics or race functions as a *context* for conducting formal research (through surveys or interviews) on students' responses to that unrest. Your *purpose* might be to provide evidence that supports your *stance* in proposing a change of campus policies. Your *audience* may include university administrators and student representatives. Your *genre* may be a persuasive speech, an article in the student newspaper, a poster, or a public service video. *Cultural elements* include the unrest and its relation to the university environment for both students and faculty. The supporting evidence is the resulting data and analysis from the surveys or interviews. But before you consider how to use evidence in reporting research, it is important to understand the research process itself.

With a focus on the role of evidence collection in research, this chapter presents methods for introducing research as evidence, examines the genre and writing processes associated with argumentative research papers, and addresses the use of unbiased language in creating and reporting effective research.

12.1 Introducing Research and Research Evidence

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Articulate how research evidence and sources are key rhetorical concepts in presenting a position or an argument.
- Locate and distinguish between primary and secondary research materials.
- Implement methods and technologies commonly used for research and communication within various fields.

The writing tasks for this chapter and the next two chapters are based on argumentative research. However, not all researched evidence (data) is presented in the same genre. You may need to gather evidence for a poster, a performance, a story, an art exhibit, or even an architectural design. Although the genre may vary, you usually will be required to present a **perspective**, or viewpoint, about a **debatable issue** and persuade readers to support the "validity of your viewpoint," as discussed in Position Argument: Practicing the Art of Rhetoric. Remember, too, that a debatable issue is one that has more than a single perspective and is subject to disagreement.

The Research Process

Although individual research processes are rhetorically situated, they share some common aspects:

- **Interest.** The researcher has a genuine interest in the topic. It may be difficult to fake curiosity, but it is possible to develop it. Some academic assignments will allow you to pursue issues that are personally important to you; others will require you to dive into the research first and generate interest as you go.
- **Questions.** The researcher asks questions. At first, these questions are general. However, as researchers gain more knowledge, the questions become more sharply focused. No matter what your research

assignment is, begin by articulating questions, find out where the answers lead, and then ask still more questions.

- **Answers.** The researcher seeks answers from people as well as from print and other media. Research projects profit when you ask knowledgeable people, such as librarians and other professionals, to help you answer questions or point you in directions to find answers. Information about research is covered more extensively in Research Process: Accessing and Recording Information and Annotated Bibliography: Gathering, Evaluating, and Documenting Sources.
- **Field research.** The researcher conducts field research. Field research allows researchers not only to ask questions of experts but also to observe and experience directly. It allows researchers to generate original data. No matter how much other people tell you, your knowledge increases through personal observations. In some subject areas, field research is as important as library or database research. This information is covered more extensively in Research Process: Accessing and Recording Information.
- **Examination of texts.** The researcher examines texts. Consulting a broad range of texts—such as magazines, brochures, newspapers, archives, blogs, videos, documentaries, or peer-reviewed journals—is crucial in academic research.
- **Evaluation of sources.** The researcher evaluates sources. As your research progresses, you will double-check information to find out whether it is confirmed by more than one source. In informal research, researchers evaluate sources to ensure that the final decision is satisfactory. Similarly, in academic research, researchers evaluate sources to ensure that the final product is accurate and convincing. Previewed here, this information is covered more extensively in Research Process: Accessing and Recording Information.
- **Writing.** The researcher writes. The writing during the research process can take a range of forms: from notes during library, database, or field work; to journal reflections on the research process; to drafts of the final product. In practical research, writing helps researchers find, remember, and explore information. In academic research, writing is even more important because the results must be reported accurately and thoroughly.
- **Testing and Experimentation.** The researcher tests and experiments. Because opinions vary on debatable topics and because few research topics have correct or incorrect answers, it is important to test and conduct experiments on possible hypotheses or solutions.
- **Synthesis.** The researcher synthesizes. By combining information from various sources, researchers support claims or arrive at new conclusions. When synthesizing, researchers connect evidence and ideas, both original and borrowed. Accumulating, sorting, and synthesizing information enables researchers to consider what evidence to use in support of a thesis and in what ways.
- **Presentation.** The researcher presents findings in an interesting, focused, and well-documented product.

Types of Research Evidence

Research evidence usually consists of data, which comes from borrowed information that you use to develop your thesis and support your organizational structure and reasoning. This evidence can take a range of forms, depending on the type of research conducted, the audience, and the genre for reporting the research.

Primary Research Sources

Although precise definitions vary somewhat by discipline, **primary data sources** are generally defined as firsthand accounts, such as texts or other materials produced by someone drawing from direct experience or observation. Primary source documents include, but are not limited to, personal narratives and diaries; eyewitness accounts; interviews; original documents such as treaties, official certificates, and government documents detailing laws or acts; speeches; newspaper coverage of events at the time they occurred; observations; and experiments. Primary source data is, in other words, original and in some way conducted or collected primarily by the researcher. The Research Process: Where to Look for Existing Sources and Compiling Sources for an Annotated Bibliography contain more information on both primary and secondary sources.

Secondary Research Sources

Secondary sources, on the other hand, are considered at least one step removed from the experience. That is, they rely on sources other than direct observation or firsthand experience. Secondary sources include, but are not limited to, most books, articles online or in databases, and textbooks (which are sometimes classified as tertiary sources because, like encyclopedias and other reference works, their primary purpose might be to summarize or otherwise condense information). Secondary sources (https://openstax.org/r/secondarysources1) regularly cite and build upon primary sources to provide perspective and analysis. Effective use of researched evidence usually includes both primary and secondary sources. Works of history, for example, draw on a large range of primary and secondary sources, citing, analyzing, and synthesizing information to present as many perspectives of a past event in as rich and nuanced a way as possible.

It is important to note that the distinction between primary and secondary sources depends in part on their use: that is, the same document can be both a primary source *and* a secondary source. For example, if Scholar X wrote a biography about Artist Y, the biography would be a secondary source about the artist and, at the same time, a primary source about the scholar.

12.2 Trailblazer

Argumentative Research Trailblazer: Samin Nosrat

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify and explain key rhetorical concepts.
- Analyze how authors make claims and support them with evidence in a range of activities outside of academic writing.



FIGURE 12.2 Fresh produce in markets like this one in France continue to inspire Samin Nosrat (https://openstax.org/r/saminnosrat)'s recipes and ideas about food. (credit: "Légumes" by Arnaud 25/ Wikimedia Commons, Public Domain)

"I love doing the homework on recipes and traditions . . . [I'm] excited to . . . read and research."

Food writer, chef, and TV host Samin Nosrat (b. 1979) was born in San Diego, California, to Iranian parents who, as followers of the Baha'i faith, immigrated to the United States to avoid religious persecution in their

native country. When she was a student at the University of California, Berkeley, Nosrat became interested in cooking after a dinner at Berkeley's well-known Chez Panisse, the restaurant belonging to award-winning chef, author, and food activist Alice Waters (b. 1944). Indeed, Nosrat became so interested that she got a job bussing tables at the restaurant several months later. After a year, she "moved up" to the kitchen, where she became a cook, working with Chez Panisse chef Cal Peternell.

Nosrat is well known for her cookbook *Salt, Fat, Acid, Heat: Mastering the Elements of Good Cooking* (2017), which won the prestigious James Beard Award in 2018 and also reached the *New York Times* best seller list that year. In the book, Nosrat claims that "like a scholar in search of primary sources," she wanted "to experience authentic versions of the dishes" she loved. In addition to being a chef and writer, she has hosted an award-winning Netflix docuseries based on her book and until February 2021 was a regular columnist for *The New York Times Magazine*.

The underlying thesis of Nosrat's *Salt, Fat, Acid, Heat (https://openstax.org/r/saltfatacid)* is that one should trust their senses in the kitchen, building confidence and developing the knowledge to gain this trust. Nosrat emphasizes an intuitive, elemental approach to cooking. "Anyone can cook anything and make it delicious," Nosrat claims in the book's introduction, establishing that excellent cooking is based on skill in using and balancing the four basic elements named in the title. She found solid evidence for this stance in Japan, where the cuisine features salt; in Italy, where the cuisine features fat; in Mexico, where the cuisine features acid; and in California, where the cuisine features heat. Nosrat explains these four elements in detail and supports her premise with research, interviews, and internships with talented cooks in different countries.

When talking about her television show, Nosrat says, "Good food around the world is more similar than it is different." She considers how the chemistry and the culture of cooking work together around the world to create universally good food and, at the same time, create empathy and common ground.

Nosrat's audience can thus discern a persuasive purpose to her research into cooking. She argues that in addition to food, cooking is about people, and she hopes that by eating the food of a particular culture, readers and viewers will develop compassion for the people of that culture, despite politics or history. Seeking answers to important questions, Nosrat asks, "Does [food] really matter? Can food make a difference?"

As she continues her mission of research and writing, Nosrat feels the responsibility of her calling: to provide greater cross-cultural understanding and to center minoritized voices and traditions. She wants readers to feel safe inside her book, supported by the context she provides and her sensitivity to culture.

Discussion Questions

1. Consider the rhetorical situation: In what ways does Samin Nosrat's writing respond to purpose, audience, genre, stance, culture, and context?
2. In what ways does Nosrat aim to make the cookbook genre persuasive or argumentative?
3. What is Nosrat's claim in *Salt, Fat, Acid, Heat*?
4. In what ways does Nosrat present reasoning and evidence?
5. In what ways does Nosrat use research to support her claim?

12.3 Glance at Genre: Introducing Research as Evidence

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify key terms and characteristics of evidence-based research writing.
- Participate effectively in a continuing scholarly conversation by synthesizing research and discussing it with others.
- Identify and analyze genre conventions as shaped by purpose, culture, and expectation.

Good writing satisfies audience expectations in genre, style, and content. Similarly, careful research, conducted according to the scope and method of each discipline, is a precondition of good research writing. In the humanities, research usually focuses on texts, individual ideas, speculations, insights, and imaginative connections. On the other hand, research in the social and physical sciences tends to focus on data and ideas that can be verified through observation, measurement, and testing. However, regardless of differences in disciplines and preferences of varying audiences, certain principles of research, writing, and supporting a position hold true across the curriculum.

The Genre of Research: Joining Scholarly Conversations

Conducting research on topics about which you have limited knowledge can be intimidating. To feel more comfortable with research, you can think of it as participating in a scholarly conversation, with the understanding that all knowledge on a particular subject is connected. Even if you discover only a small amount of information on your topic, the conversations around it may have begun long before you were born and may continue beyond your lifetime. Your involvement with the topic is your way of entering a conversation with other students and scholars at this time, as you discuss and synthesize information. After you leave the conversation, or finish your research, others are likely to pick it up again.



FIGURE 12.3 Students participate in scholarly conversations as they share their ideas and research. (credit: "Visitas - SMAC - Volta Redonda, RJ" by maistelecentros/flickr, CC BY 2.0)

What you find through research helps you provide solid evidence that empowers you to add productively to the conversation. Thinking of research in this way means understanding the connections among your topic, your course materials, and larger historical, social, political, and economic contexts and themes. Understanding such connectedness begins with choosing your topic and continues through all phases of your research.

Key Terms in Research Writing

These are key terms and characteristics of evidence-based research writing:

- **Citation.** When reporting research, writers use citations to acknowledge and give credit for all borrowed materials. Citation also strengthens the credibility, or ethos, of the researcher. Citations always have two parts. Internal citations are short references that lead readers to more detailed information about how to find the sources. External citations are the entries listed, with publishing information, on the Works Cited or References page of the paper. Formatting of both internal and external citations is disciplinary specific. See the Handbook for specific information about MLA Documentation and Format and APA Documentation and Format.
- **claim.** Claims are the points you make in your report. They are based on and supported by research and evidence.
- **Counterclaims.** When it comes to research, the counterclaim is the writer's thoughtful consideration and addressing of the other side's objections to claims made or even to the topic itself. Counterclaims may need to be supported by further research and evidence.
- **Evidence.** Within the genre of research, evidence is either findings from original research or, more often, borrowed information that helps you develop your thesis and support your organizational structure and line of reasoning.
- **Field research.** Field research is basically primary research you conduct through observation or experimentation. Depending on your research question, you may need to seek answers by visiting museums or businesses, attending concerts, conducting interviews, observing classrooms or professionals at work, performing experiments, or following leads. Field research is covered extensively in Research Process: How to Create Sources.
- **Research question.** Your research question dictates your general line or lines of inquiry that ultimately guide your research. In developing your research question(s), you are narrowing the scope of your topic. Your research question(s) will come from the purpose of your research, the audience of your research product, and the genre for reporting your research.
- **Thesis.** The thesis is the claim, position, or hypothesis by which you attempt to answer your formulated research question(s).
- **Reasoning.** Similar to an argumentative essay, the line of reasoning in a research essay, report, or presentation is the organizational arrangement of the supports and evidence that back up your thesis.
- **Topic.** The topic is the general subject or content area of your research. Strong topics are usually those that involve some controversy or debate. Topics that are not debatable or have no nuanced perspectives do not make for strong research questions or lines of inquiry.

12.4 Annotated Student Sample: "Healthy Diets from Sustainable Sources Can Save the Earth" by Lily Tran

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Analyze how writers use evidence in research writing.
- Analyze the ways a writer incorporates sources into research writing, while retaining their own voice.
- Explain the use of headings as organizational tools in research writing.
- Analyze how writers use evidence to address counterarguments when writing a research essay.

Introduction

In this argumentative research essay for a first-year composition class, student Lily Tran creates a solid, focused argument and supports it with researched evidence. Throughout the essay, she uses this evidence to support cause-and-effect and problem-solution reasoning, make strong appeals, and develop her ethos on the topic.

LIVING BY THEIR OWN WORDS

Food as Change

> For the human race to have a sustainable future, massive changes in the way food is produced, processed, and distributed are necessary on a global scale.

Purpose. *Lily Tran refers to what she sees as the general purpose for writing this paper: the problem of current global practices in food production, processing, and distribution. By presenting the "problem," she immediately prepares readers for her proposed solution.*

> The required changes will affect nearly all aspects of life, including not only world hunger but also health and welfare, land use and habitats, water quality and availability, energy use and production, greenhouse gas emissions and climate change, economics, and even cultural and social values. These changes may not be popular, but they are imperative. The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact—and starting now.

Thesis. *Leading up to this clear, declarative thesis statement are key points on which Tran will expand later. In doing this, she presents some foundational evidence that connects the problem to the proposed solution.*

THE COMING FOOD CRISIS

> The world population has been rising exponentially in modern history. From 1 billion in 1804, it doubled to approximately 2 billion by 1927, then doubled again to approximately 4 billion in 1974. By 2019, it had nearly doubled again, rising to 7.7 billion ("World Population by Year"). It has been projected to reach nearly 10 billion by 2050 (Berners-Lee et al.). At the same time, the average life span also has been increasing. These situations have led to severe stress on the environment, particularly in the demands for food. It has been estimated, for example, that by 2050, milk production will increase 58 percent and meat production 73 percent (Chai et al.).

Evidence. *In this first supporting paragraph, Tran uses numerical evidence from several sources. This numerical data as evidence helps establish the projection of population growth. By beginning with such evidence, Tran underscores the severity of the situation.*

> Theoretically, the planet can produce enough food for everyone, but human activities have endangered this capability through unsustainable practices. Currently, agriculture produces 10–23 percent of global greenhouse gas emissions. Greenhouse gases—the most common being carbon dioxide, methane, nitrous oxide, and water vapor— trap heat in the atmosphere, reradiate it, and send it back to Earth again. Heat trapped in the atmosphere is a problem because it causes unnatural global warming as well as air pollution, extreme weather conditions, and respiratory diseases.

Audience. *With her audience in mind, Tran briefly explains the problem of greenhouse gases and global warming.*

> It has been estimated that global greenhouse gas emissions will increase by as much as 150 percent by 2030 (Chai et al.). Transportation also has a negative effect on the environment when foods are shipped around the world. As Joseph Poore of the University of Oxford commented, "It's essential to be mindful about everything we consume: air-transported fruit and veg can create more greenhouse gas emissions per kilogram than poultry meat, for example" (qtd. in Gray).

Transition. *By beginning this paragraph with her own transition of ideas, Tran establishes control over the organization and development of ideas. Thus, she retains her sources as supports and does not allow them to dominate her essay.*

> Current practices have affected the nutritional value of foods. Concentrated animal-feeding operations, intended to increase production, have had the side effect of decreasing nutritional content in animal protein and increasing saturated fat. One study found that an intensively raised chicken in 2017 contained only one-sixth of the amount of omega-3 fatty acid, an essential nutrient, that was in a chicken in 1970. Today the majority of calories in chicken come from fat rather than protein (World Wildlife Fund).

Example. *By focusing on an example (chicken), Tran uses specific research data to develop the nuance of the argument.*

> Current policies such as government subsidies that divert food to biofuels are counterproductive to the goal of achieving adequate global nutrition. Some trade policies allow "dumping" of below-cost, subsidized foods on developing countries that should instead be enabled to protect their farmers and meet their own nutritional needs (Sierra Club). Too often, agriculture's objectives are geared toward maximizing quantities produced per acre rather than optimizing output of critical nutritional needs and protection of the environment.

AREAS OF CONCERN

Hunger and Nutrition

Headings and Subheadings. *Throughout the essay, Tran has created headings and subheadings to help organize her argument and clarify it for readers.*

> More than 820 million people around the world do not have enough to eat. At the same time, about a third of all grains and almost two-thirds of all soybeans, maize, and barley crops are fed to animals (Barnard). According to the World Health Organization, 462 million adults are underweight, 47 million children under 5 years of age are underweight for their height, 14.3 million are severely underweight for their height, and 144 million are stunted ("Malnutrition"). About 45 percent of mortality among children under 5 is linked to undernutrition. These deaths occur mainly in low- and middle-income countries where, in stark contrast, the rate of childhood obesity is rising. Globally, 1.9 billion adults and 38.3 million children are overweight or obese ("Obesity"). Undernutrition and obesity can be found in the same household, largely a result of eating energy-dense foods that are high in fat and sugars. The global impact of malnutrition, which includes both undernutrition and obesity, has lasting developmental, economic, social, and medical consequences.

> In 2019, Berners-Lee et al. published the results of their quantitative analysis of global and regional food supply. They determined that significant changes are needed on four fronts:
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> Food production must be sufficient, in quantity and quality, to feed the global population without unacceptable environmental impacts. Food distribution must be sufficiently efficient so that a diverse range of foods containing adequate nutrition is available to all, again without unacceptable environmental impacts. Socio-economic conditions must be sufficiently equitable so that all consumers can access the quantity and range of foods needed for a healthy diet. Consumers need to be able to make informed and rational choices so that they consume a healthy and environmentally sustainable diet (10).

Block Quote. *The writer has chosen to present important evidence as a direct quotation, using the correct format for direct quotations longer than four lines. See Section Editing Focus: Integrating Sources and Quotations for more information about block quotes.*

> Among their findings, they singled out, in particular, the practice of using human-edible crops to produce meat, dairy, and fish for the human table. Currently 34 percent of human-edible crops are fed to animals, a practice that reduces calorie and protein supplies. They state in their report, "If society continues on a 'business-as-usual' dietary trajectory, a 119% increase in edible crops grown will be required by 2050" (1). Future food production and distribution must be transformed into systems that are nutritionally adequate, environmentally sound, and economically affordable.

Land and Water Use

> Agriculture occupies 40 percent of Earth's ice-free land mass (Barnard). While the net area used for producing food has been fairly constant since the mid-20th century, the locations have shifted significantly. Temperate regions of North America, Europe, and Russia have lost agricultural land to other uses, while in the tropics, agricultural land has expanded, mainly as a result of clearing forests and burning biomass (Willett et al.). Seventy percent of the rainforest that has been cut down is being used to graze livestock (Münter). Agricultural use of water is of critical concern both quantitatively and qualitatively. Agriculture accounts for about 70 percent of freshwater use, making it "the world's largest water-consuming sector" (Barnard). Meat, dairy, and egg production causes water pollution, as liquid wastes flow into rivers and to the ocean (World Wildlife Fund and Knorr Foods). According to the Hertwich et al., "the impacts related to these activities are unlikely to be reduced, but rather enhanced, in a business-as-usual scenario for the future" (13).

Statistical Data. *To develop her points related to land and water use, Tran presents specific statistical data throughout this section. Notice that she has chosen only the needed words of these key points to ensure that she controls the development of the supporting point and does not overuse borrowed source material.*

Defining Terms. *Aware of her audience, Tran defines monocropping, a term that may be unfamiliar.*

> Earth's resources and ability to absorb pollution are limited, and many current agricultural practices undermine these capacities. Among these unsustainable practices are monocropping [growing a single crop year after year on the same land], concentrated animal-feeding operations, and overdependence on manufactured pesticides and fertilizers (Hamilton). Such practices deplete the soil, dramatically increase energy use, reduce pollinator populations, and lead to the collapse of resource supplies. One study found that producing one gram of beef for human consumption requires 42 times more land, 2 times more water, and 4 times more nitrogen than staple crops. It also creates 3 times more greenhouse gas emissions (Chai et al.). The EAT–*Lancet* Commission calls for "halting expansion of new agricultural land at the expense of natural ecosystems . . . strict protections on intact ecosystems, suspending concessions for logging in protected areas, or conversion of remaining intact ecosystems, particularly peatlands and forest areas" (Willett et al. 481). The Commission also calls for land-use zoning, regulations prohibiting land clearing, and incentives for protecting natural areas, including forests.

Synthesis. *The paragraphs above and below this comment show how Tran has synthesized content from several sources to help establish and reinforce key supports of her essay.*

Greenhouse Gas and Climate Change

> Climate change is heavily affected by two factors: greenhouse gas emissions and carbon sequestration. In nature, the two remain in balance; for example, most animals exhale carbon dioxide, and most plants capture carbon dioxide. Carbon is also captured, or sequestered, by soil and water, especially oceans, in what are called "sinks." Human activities have skewed this balance over the past two centuries. The shift in land use, which exploits land, water, and fossil energy, has caused increased greenhouse-gas emissions, which in turn accelerate climate change.

> Global food systems are threatened by climate change because farmers depend on relatively stable climate systems to plan for production and harvest. Yet food production is responsible for up to 30 percent of greenhouse gas emissions (Barnard). While soil can be a highly effective means of carbon sequestration, agricultural soils have lost much of their effectiveness from overgrazing, erosion, overuse of chemical fertilizer, and excess tilling. Hamilton reports that the world's cultivated and grazed soils have lost 50 to 70 percent of their ability to accumulate and store carbon. As a result, "billions of tons of carbon have been released into the atmosphere."

Direct Quotation and Paraphrase. *While Tran has paraphrased some content of this source borrowing, because of the specificity and impact of the number— "billions of tons of carbon"—she has chosen to use the author's original words. As she has done elsewhere in the essay, she has indicated these as directly borrowed words by placing them*

within quotation marks. See Section 12.5 for more about paraphrasing.

> While carbon sequestration has been falling, greenhouse gas emissions have been increasing as a result of the production, transport, processing, storage, waste disposal, and other life stages of food production. Agriculture alone is responsible for fully 10 to 12 percent of global emissions, and that figure is estimated to rise by up to 150 percent of current levels by 2030 (Chai et al.). Münter reports that "more greenhouse gas emissions are produced by growing livestock for meat than all the planes, trains, ships, cars, trucks, and all forms of fossil fuel-based transportation combined" (5). Additional greenhouse gases, methane and nitrous oxide, are produced by the decomposition of organic wastes. Methane has 25 times and nitrous oxide has nearly 300 times the global warming potential of carbon dioxide (Curnow). Agricultural and food production systems must be reformed to shift agriculture from greenhouse gas source to sink.

Social and Cultural Values

> As the Sierra Club has pointed out, agriculture is inherently cultural: all systems of food production have "the capacity to generate . . . economic benefits and ecological capital" as well as "a sense of meaning and connection to natural resources." Yet this connection is more evident in some cultures and less so in others. Wealthy countries built on a consumer culture emphasize excess consumption. One result of this attitude is that in 2014, Americans discarded the equivalent of $165 billion worth of food. Much of this waste ended up rotting in landfills, comprised the single largest component of U.S. municipal solid waste, and contributed a substantial portion of U.S. methane emissions (Sierra Club). In low- and middle-income countries, food waste tends to occur in early production stages because of poor scheduling of harvests, improper handling of produce, or lack of market access (Willett et al.). The recent "America First" philosophy has encouraged prioritizing the economic welfare of one nation to the detriment of global welfare and sustainability.

Synthesis and Response to Claims. *Here, as in subsequent sections, while still relying heavily on facts and content from borrowed sources, Tran provides her synthesized understanding of the information by responding to key points.*

> In response to claims that a vegetarian diet is a necessary component of sustainable food production and consumption, Lusk and Norwood determined the importance of meat in a consumer's diet. Their study indicated that meat is the most valuable food category to consumers, and "humans derive great pleasure from consuming beef, pork, and poultry" (120). Currently only 4 percent of Americans are vegetarians, and it would be difficult to convince consumers to change their eating habits. Purdy adds "there's the issue of philosophy. A lot of vegans aren't in the business of avoiding animal products for the sake of land sustainability. Many would prefer to just leave animal husbandry out of food altogether."

> At the same time, consumers expect ready availability of the foods they desire, regardless of health implications or sustainability of sources. Unhealthy and unsustainable foods are heavily marketed. Out-of-season produce is imported year-round, increasing carbon emissions from air transportation. Highly processed and packaged convenience foods are nutritionally inferior and waste both energy and packaging materials. Serving sizes are larger than necessary, contributing to overconsumption and obesity. Snack food vending machines are ubiquitous in schools and public buildings. What is needed is a widespread attitude shift toward reducing waste, choosing local fruits and vegetables that are in season, and paying attention to how foods are grown and transported.

Thesis Restated. *Restating her thesis, Tran ends this section by advocating for a change in attitude to bring about sustainability.*

DISSENTING OPINIONS

Counterclaims. *Tran uses equally strong research to present the counterargument. Presenting both sides by addressing objections is important in constructing a clear, well-reasoned argument. Writers should use as much rigor in finding research-based evidence to counter the opposition as they do to develop their argument.*

> Transformation of the food production system faces resistance for a number of reasons, most of which dispute the need for plant-based diets. Historically, meat has been considered integral to athletes' diets and thus has caused many consumers to believe meat is necessary for a healthy diet. Lynch et al. examined the impact of plant-based diets on human physical health, environmental sustainability, and exercise performance capacity. The results show "it is unlikely that plant-based diets provide advantages, but do not suffer from disadvantages, compared to omnivorous diets for strength, anaerobic, or aerobic exercise performance" (1).

> A second objection addresses the claim that land use for animal-based food production contributes to pollution and greenhouse gas emissions and is inefficient in terms of nutrient delivery. Berners-Lee et al. point out that animal nutrition from grass, pasture, and silage comes partially from land that cannot be used for other purposes, such as producing food directly edible by humans or for other ecosystem services such as biofuel production. Consequently, nutritional losses from such land use do not fully translate into losses of human-available nutrients (3).

Paraphrase. *Tran has paraphrased the information as support. Though she still cites the source, she has changed the words to her own, most likely to condense a larger amount of original text or to make it more accessible.*

> While this objection may be correct, it does not address the fact that natural carbon sinks are being destroyed to increase agricultural land and, therefore, increase greenhouse gas emissions into the atmosphere.

> Another significant dissenting opinion is that transforming food production will place hardships on farmers and others employed in the food industry. Farmers and ranchers make a major investment in their own operations. At the same time, they support jobs in related industries, as consumers of farm machinery, customers at local businesses, and suppliers for other industries such as food processing (Schulz). Sparks reports that "livestock farmers are being unfairly 'demonized' by vegans and environmental advocates" and argues that while farming includes both costs and benefits, the costs receive much more attention than the benefits.

FUTURE GENERATIONS

> The EAT–*Lancet* Commission calls for a transformation in the global food system, implementing different core processes and feedback. This transformation will not happen unless there is "widespread, multi-sector, multilevel action to change what food is eaten, how it is produced, and its effects on the environment and health, while providing healthy diets for the global population" (Willett et al. 476). System changes will require global efforts coordinated across all levels and will require governments, the private sector, and civil society to share a common vision and goals. Scientific modeling indicates 10 billion people could indeed be fed a healthy and sustainable diet.

Conclusion. *While still using research-based sources as evidence in the concluding section, Tran finishes with her own words, restating her thesis.*

> For the human race to have a sustainable future, massive changes in the way food is produced, processed, and distributed are necessary on a global scale. The required changes will affect nearly all aspects of life, including not only world hunger but also health and welfare, land use and habitats, water quality and availability, energy use and production, greenhouse gas emissions and climate change, economics, and even cultural and social values. These changes may not be popular, but they are imperative. They are also achievable. The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now.

Sources. *Note two important aspects of the sources chosen: 1) They represent a range of perspectives, and 2) They are all quite current. When exploring a contemporary topic, it is important to avoid research that is out of date.*

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Discussion Questions

1. In the second paragraph, what role does statistical data as evidence play in helping Lily Tran develop the thesis? What other evidence would be effective in achieving this goal?
2. In the second paragraph of the section "The Coming Food Crisis," how does Tran use research evidence to provide an understanding of key concepts?
3. By reviewing the organizational tools of headings and subheadings, diagram or outline the development of Tran's argument.
4. Locate places where Tran incorporates research evidence into her own ideas or words through summary or paraphrase. How do these examples differ from the block quote under "Areas of Concern"? Is one method more or less effective in establishing ethos, or credibility, for the writer? Why or why not?
5. How convincing is Tran's use of evidence in addressing counterclaims? Explain your answer.

12.5 Writing Process: Integrating Research

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify characteristics of and formulate a strong thesis.
- Evaluate sources to decide what to include in a research essay.
- Synthesize information from outside sources with your own ideas in research writing while retaining a writerly voice.
- Distinguish between a quotation, summary, and paraphrase and use each appropriately.
- Draft an argumentative research essay.
- Experience the collaborative and social aspects of writing processes.
- Give and act on productive feedback to works in progress.

With a clearer understanding of how to work with sources to support and develop your position, you are just about ready to join the conversation and begin a research writing project of your own. The rest of this chapter will guide you through the process.

Summary of Assignment

For this assignment, you will write an argumentative research essay in which you take a position on a food-based topic. The objective in developing this essay is to explore a topic, concept, or question with which you may be unfamiliar or about which you want to know more. As a first step, creating a list of possible topics will allow you to consider the range of possibilities. Consider the following, for example:

- Health aspects of caffeine or alcohol
- Vegetarian diets
- Eating disorders
- Food shortages
- School lunches

Next, formulating a research question will help you consider the scope of your essay by providing guidelines to follow in your research. Consider the following, for example:

- Is the long-term but limited consumption of caffeine or alcohol (red wine, for example) healthy or unhealthy for the body? Why?
- What are the environmental benefits of a vegetarian diet?
- What are the causes of eating disorders, and how can they be circumvented?
- What can be done to alleviate food shortages in a particular country?
- What is the school's responsibility in providing students with nutrition?

As you explore possible topics and develop your focus for the paper, consider significant points of contention—that is, their debatable nature: perhaps an important viewpoint that has not been widely addressed or a perspective that has not adequately been explored. Your thesis-driven essay should follow these criteria:

- 10–12 pages, double-spaced, 12-point font (standard one-inch margins)
- 8–10 sources (reflecting a range of primary and secondary sources, both print and digital)
- MLA or APA documentation (in-text and end-of-text citation) as assigned by your instructor

You will synthesize the information you discover during your research to make connections about the potential significance of your topic for your audience and for further inquiry. You will develop your essay on the basis of thorough research of multiple sources and full analysis of your findings. Use sources as evidence to support, contradict, or expand your original ideas or thinking. Be sure to include extensive analysis or evaluation regarding your research question.

Another Lens 1. It can be challenging to come up with topics for your research paper; however, because research can often be a collaborative activity (several people researching different aspects of a topic to collaboratively write a report), brainstorming possible topics with others can help you get started.

To collaborate, form a small group, and list five possible topics on a sheet of paper or your laptop. Leave space under each topic for comments, ideas, and questions. After everyone has completed their list of topics, either move the paper or rotate seats every 10 minutes to allow group members to provide comments, ideas, and questions for all topic lists. If four people are in your group, you would provide comments, ideas, and question for three other group members, as you too will receive the same.

Another Lens 2. Be as creative and inclusive as possible when thinking about topics and data source materials. Making a list of all possible nontraditional sources that could inform your topic may help you provide another lens. Or consider the varying viewpoints from which to explore your topic. While the Annotated Student Sample includes a range of traditionally academic sources, it might be interesting to consider possible nontraditional sources for researching a food- and culture-based topic. For example, consider these as primary sources: cookbooks, food blogs, or cultural festivals at which foods are included. If possible, consider doing field research, such as conducting interviews or observing professionals on site. As you choose your topic and begin your research process, keep an open mind about ways to use a variety of sources to approach your topic in different ways.

Another Lens 3. Consider working in pairs in which each partner researches and writes on an opposing view of a single debatable issue. After researching and writing the papers as instructed, partners can set up a debate or panel discussion in which each presents their views on the subject, offering supporting evidence from their papers. Partners may want to enhance their presentations with PowerPoint or other media, including graphics, other visuals, or even sound, once again using or building further on researched evidence.

Quick Launch: Thesis Frames

The most specific way to define the scope and focus of your research paper—and, as a writer, to control the thought and creativity of it—is through the *position* you take on the topic: your **stance**, or thesis. A thesis statement is often (though not always) a single, clear, and concise sentence that reveals your stance early in the essay. Keep in mind, though, that it is *not* the essay question restated, a topic statement, an assertion of fact, or a step-by-step writing plan. Strong academic writing generally shows the thesis in the introductory section and then returns to it throughout, allowing readers to understand the writer's purpose and stance. To use a travel analogy, your thesis tells readers where you are going and why the journey matters.

As you are composing your essay, the thesis serves as a touchstone to help you determine what material is pertinent. Keeping your thesis in mind as you draft is important to ensure that your reasoning and supporting evidence are focused and relevant. A strong thesis also provides a way to measure how successful you have been in achieving your purpose—in travel terms again, it lets you judge whether you have reached your destination and explained the journey's meaning. See Writing Process: Thinking Critically About Rhetoric for more information about thesis statements.

Review the Annotated Student Sample to follow the way Lily Tran presents her thesis: "The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now." *What works? What doesn't? What can you learn from her for your own writing?*

Remember that as your topic and ideas develop, you may need to revisit your thesis statement. One good practice in writing is to revisit the thesis after completing your draft to ensure the thesis reflects the content and focus of your paper. If it does not align with the content, readers may think that you set yourself one task but completed another. If this disconnect occurs, it's time to revise the thesis or content accordingly.

To develop a working thesis for your argumentative research paper, try using one of these frames. You may change the phrasing as needed to support your ideas.

- Because _____, [someone] should _____.
- _____ saves _____, reduces _____, and saves _____.
- The lack of _____ shows _____.
- _____ influences _____ and by extension _____.
- _____ accurately (inaccurately) portrays _____ because _____.
- _____ is a result of _____, _____, and _____.
- Although some argue that _____, a close examination shows _____.
- _____ and _____ prove that _____.

Drafting: Working with Sources

When writing an argumentative research essay, you will need to draw on *other* people's research to support *your* original thinking. Such a proposition may seem complicated and even contradictory.

Your argumentative research essay writing assignment may require that you ...	While also ...
develop a topic based on what has already been said and written	writing something new and original.
rely on experts' and authorities' opinions and facts to support your ideas	engaging with the borrowed materials by improving upon or disagreeing with those same opinions.

TABLE 12.1

Your argumentative research essay writing assignment may require that you ...	While also ...
attribute credit meticulously to previous researchers	finding a way to develop your own significant contribution.
adapt your language to fit the discipline of your topic by building upon what you hear and read	finding a way to incorporate your own words and your own voice.

TABLE 12.1

You can meet these writing requirements through planning and organization. The following information is designed to help you simplify the steps.

Don't Skip the Outline

Take the time to outline each body paragraph. Compose a working topic sentence, and choose a reasoning strategy or strategies. Then, in a paragraph outline organizer like the one presented in Table 12.2, list the researched evidence you will use in the paragraph to support your topic sentence and related thesis. Model your entry on the first entry by Lily Tran. Be sure to include the in-text citation in the evidence column. Add more rows as needed.

Working Thesis: The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now.

Topic Sentence	Reasoning Strategy	Supporting Researched Evidence
Global food systems are threatened by climate change because farmers depend on relatively stable climate systems to plan for production and harvest.	Cause and effect	Yet food production is responsible for up to 30 percent of greenhouse gas emissions (Barnard).

TABLE 12.2 Paragraph outline organizer

Summary vs. Synthesis

In a research essay, you may incorporate borrowed material through synthesis, summary, quotation, or paraphrase. Because research writing is more than cutting and pasting together other people's ideas, good writers synthesize the material they use by looking for connections among sources to develop their own arguments. Summary—or a brief review of main points—is a necessary foundation for synthesis, but it is important to avoid constructing an essay simply on a series of summaries. Part of developing your own voice and control over your essay stems from your decision about which supports you use and why. You do not want sources to override your ideas. Remember, sources provide evidence for *your* thesis.

Table 12.3 shows some key differences between summary and synthesis:

Summary	Synthesis
Demonstrates comprehension/understanding	Demonstrates critical/creative thinking and insight
Collects information	Compares/contrasts information
Restates key points	Interprets key points to make new meaning
Looks within a text	Looks for connections/relationships between texts
Treats sources as distinct entities	Combines bits and pieces of sources for specific purpose
Provides overview of content	Interprets content
Requires basic reading and thinking skills	Requires complex reading and thinking skills

TABLE 12.3 Summary vs. synthesis

Notice how Lily Tran synthesizes information in her work, combining sources to respond to a claim and adding her own views in the second paragraph:

> In response to claims that a vegetarian diet is a necessary component of sustainable food production and consumption, Lusk and Norwood determined the importance of meat in a consumer's diet. Their study indicated that meat is the most valuable food category to consumers, and "humans derive great pleasure from consuming beef, pork, and poultry" (120). Currently only 4 percent of Americans are vegetarians, and it would be difficult to convince consumers to change their eating habits. Purdy adds "there's the issue of philosophy. A lot of vegans aren't in the business of avoiding animal products for the sake of land sustainability. Many would prefer to just leave animal husbandry out of food altogether."

> At the same time, consumers expect ready availability of the foods they desire, regardless of health implications or sustainability of sources. Unhealthy and unsustainable foods are heavily marketed. Out-of-season produce is imported year-round, increasing carbon emissions from air transportation. Highly processed and packaged convenience foods are nutritionally inferior and waste both energy and packaging materials. Serving sizes are larger than necessary, contributing to overconsumption and obesity. Snack food vending machines are ubiquitous in schools and public buildings. What is needed is a widespread attitude shift toward reducing waste, choosing local fruits and vegetables that are in season, and paying attention to how foods are grown and transported.

Quoting vs. Paraphrasing

One of the most common ways to use sources is by incorporating other people's words into your work. Students who are unsure about their writing sometimes overuse quotations, creating a patchwork essay of other people's voices, because they may lack confidence about using their own words. However, one key point to remember is not to allow your sources to drown out your own voice. As a writer, you can avoid overreliance on others' words by being strategic about the quotations you include and by incorporating your own explanations and analysis for the quotations that you do include. Always explain or analyze your quotations; they do not speak for themselves.

For example, Lily Tran does this kind of analysis in the following paragraph. In the first three sentences, she paraphrases and quotes from the source. In the final sentence, she looks at the implications and relates the evidence to her thesis.

> Among their findings, they singled out, in particular, the practice of using human-edible crops to produce meat, dairy, and fish for the human table. Currently 34 percent of human-edible crops are fed to animals, a practice that reduces calorie and protein supplies. They state in their report, "If society continues on a 'business-as-usual' dietary trajectory, a 119% increase in edible crops grown will be required by 2050" (1). Future food production and distribution must be transformed into systems that are nutritionally adequate, environmentally sound, and economically affordable.

A crucial skill you will develop as you practice writing is the ability to judge when to quote directly and when to paraphrase. You have no doubt used direct quotations in your writing, repeating someone else's words verbatim within your paper and placing them within quotation marks, "like this." Another way to incorporate borrowed ideas into your writing is to **paraphrase** them, or restate them in your own words. If the ideas you want to borrow are particularly long, complicated, or filled with jargon, consider paraphrasing for brevity or clarity. Paraphrasing also allows you to maintain your own voice, keeping the writing style and language as consistent as possible—a benefit especially when you draw on multiple sources at once.

Table 12.4 reviews the differences between quoting and paraphrasing and when to use each.

Quotation	Paraphrase
The borrowing must be identical to the original, comprising a narrow segment of the source. The quoted material must match the source document word for word and must be attributed to the original author.	The idea or concept borrowed from a passage is rephrased in your own words. A paraphrase must be attributed to the original source. Paraphrased material may (or may not) be shorter than the original passage, depending on the text. If any language used is the same as the language of the original source, then you are quoting, not paraphrasing. It is sometimes necessary in a paraphrase to use words directly from the borrowed material to account for technical or discipline-specific language. In such instances, place the directly quoted words within quotation marks.
Use a quotation ... • to support your definition of a new or unfamiliar term or phrase • when you want to distance yourself from the original source by quoting it to make clear that the statement is not your own • to show that an expert or authority supports your position • to provide factual evidence for a claim • to include historically significant language • when a source presents an idea in a particularly striking, moving, or unique way • to serve as a passage for analysis, comment, or critique; for example, to set out a position with which you intend to agree or disagree	**Use a paraphrase ...** • if a quotation would break the flow of your paper (Too many quotations can make an essay sound choppy and difficult to follow.) • to communicate statistics and numerical data • when combining information from a source with your own analysis or other data (synthesizing) • when what you want from your source is the idea**,** not the language that expresses it • if you can state the point of the material more succinctly by eliminating irrelevant information and not alter the meaning of the passage • to explain or simplify a passage that may be difficult to understand

TABLE 12.4 When to quote and when to paraphrase

Although quoting can be more straightforward, consider these suggestions when paraphrasing:

- Focus on ideas and on understanding the paper or passage as a whole rather than skimming for specific phrases.
- Put the original text aside when you write so that it doesn't overly influence you.
- Restructure the idea to reflect the way *your* brain works.
- Change the words so that the paraphrase reflects your language and tone. Think about how you would explain the idea to someone unfamiliar with your subject (your mother, your roommate, your sister).

Here is an example of how Lily Tran combines paraphrase and quotation:

> Global food systems are threatened by climate change because farmers depend on relatively stable climate systems to plan for production and harvest. Yet food production is responsible for up to 30 percent of greenhouse gas emissions (Barnard). While soil can be a highly effective means of carbon sequestration, agricultural soils have lost much of their effectiveness from overgrazing, erosion, overuse of chemical fertilizer, and excess tilling. Hamilton reports that the world's cultivated and grazed soils have lost 50 to 70 percent of their ability to accumulate and store carbon. As a result, "billions of tons of carbon have been released into the atmosphere."

For more information on quoting, summarizing, and paraphrasing, visit Purdue University's Online Writing Lab (OWL) (https://openstax.org/r/purdueOWL).

Opening and Closing

Lead your argumentative research essay with your best punch. Make your opening so strong your reader feels compelled to continue. Make your closing so memorable your reader can't forget it. Because readers pay special attention to openings and closings, make these sections work for you. Start with a title and lead paragraph that grab readers' attention and alert them to what is to come. End with closings that sum up and reinforce where readers have been. Choose from the menu of options presented in Table 12.5 as you draft your essay. You may want to write more than one opening and closing and then ask your peer conference partner to give feedback about their preference and why they have that preference.

Opening Strategies	Closing Strategies
Describe a related conflict.	
Explain the evolution of your thesis.	Provide the answer to your research question.
Provide a related anecdote.	Return to the scene set by the opening.
Start with a sensory detail.	Resolve the problem you have explored.
Introduce a related quotation.	Make a recommendation or a call to action.
Shock readers with a statistic.	Speculate about the future with regard to the issue.
Ask a rhetorical question.	Revisit your thesis.
Present the chronology of the issue.	Leave readers with an insightful thought to ponder.
End with your thesis.	

TABLE 12.5 Writing menu

Look again at the way Lily Tran begins her essay by explaining the evolution of her thesis. *Is it effective in grabbing your attention? Why or why not? What are some other strategies that she might have used?*

> For the human race to have a sustainable future, massive changes in the way food is produced, processed, and distributed are necessary on a global scale. The required changes will affect nearly all aspects of life, including not only world hunger but also health and welfare, land use and habitats, water quality and availability, energy use and production, greenhouse gas emissions and climate change, economics, and even cultural and social values. These changes may not be popular, but they are imperative. The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now.

Now look again at the way Lily Tran ends her essay by revisiting her thesis. *Is it effective in leaving you with something to think about? Why or why not? What are some other strategies that she might have used?*

> For the human race to have a sustainable future, massive changes in the way food is produced, processed, and distributed are necessary on a global scale. The required changes will affect nearly all aspects of life, including not only world hunger but also health and welfare, land use and habitats, water quality and availability, energy use and production, greenhouse gas emissions and climate change, economics, and even cultural and social values. These changes may not be popular, but they are imperative. They are also achievable. The human race must turn to sustainable food systems that provide healthy diets with minimal environmental impact, starting now.

Responding to Counterarguments

The final element of your argumentative research essay is a response to counterarguments, or others' objections. To establish your credibility on the subject, you need to acknowledge and address the most important arguments against your thesis. Look again at Lily Tran's response to a counterargument, which she acknowledges and then addresses. *Does she address the counterargument fully? What could she add to the paragraph to address the counterargument more fully and forcefully?*

> A second objection addresses the claim that land use for animal-based food production contributes to pollution and greenhouse gas emissions and is inefficient in terms of nutrient delivery. Berners-Lee et al. point out that animal nutrition from grass, pasture, and silage comes partially from land that cannot be used for other purposes, such as producing food directly edible by humans or for other ecosystem services such as biofuel production. Consequently, nutritional losses from such land use do not fully translate into losses of human-available nutrients.

Use a graphic organizer like Table 12.6 to plan your response to important arguments against your thesis, and consult Writing Process: Creating a Position Argument.

Introduction	That ... (What do critics claim?)	However, But, Despite ... (What do you say in response?)
While some may claim ... Although critics argue ... Those opposed suggest ... Some opponents claim ... Those critical of the idea argue ...		
Some opponents claim ...	that nutritional losses from such land use do not fully translate into losses of human-available nutrients.	While this objection may be correct, it does not address the fact that natural carbon sinks are being destroyed to increase agricultural land and, therefore, increase greenhouse gas emissions into the atmosphere.

TABLE 12.6 Counterclaim organizer

Peer Review: Switch Sides

One way to gain a new perspective for revision is to switch sides in arguing a position. Your peer conference partner can help you with this exercise. Rewrite a paragraph of your draft from an alternative viewpoint. Ask your partner to read both versions. Discuss the similarities and differences regarding the rhetorical situation. In what ways might you revise your original paragraph to better address the issues of the alternative paragraph?

For example, Issa, a mountain bike enthusiast, wrote his draft in favor of opening up more wilderness trails for mountain bikers to use. However, before writing his final draft, he researched the arguments against his position and wrote from that viewpoint:

> Hikers and other passive trail users argue against allowing mountain bikes onto narrow trails traditionally traveled only by foot and horse. They point out that the wide, deeply treaded tires of mountain bikes cause erosion and that the high speeds of the bikers startle and upset both hikers and horses. According to hiker Donald Meserlain, the bikes "ruin the tranquility of the woodlands and drive out hikers, bird watchers, and strollers" (Hanley 4).

For the writer, the main advantage of switching sides for a draft may be a better understanding of the opposition's viewpoint, making for a more effective argument against it in the final draft. In fact, for his final draft, Issa argues his original position in favor of mountain bikes, but he does so with more understanding, empathy, and effectiveness because he spent some time with the opposition. His final draft makes it clear where he stands on the issue. The tone of the mountain bike essay is now less strident and more thoughtful.

> Educated mountain biking, like hiking and horseback riding, respects the environment and promotes peace and conservation, not noise and destruction. Making this case has begun to pay off, and the battle over who walks and who rides the trails should now shift in favor of peaceful coexistence. Buoyed by studies showing that bicycle tires cause no more erosion or trail damage than the boots of hikers, and far less than horses' hooves, mountain bike advocates are starting to find receptive ears among environmental organizations (Schwartz 78).

Another switch that pays good dividends for the writer is changing the audience. In college writing situations, the final audience always includes the instructor, so such a change may simply be a temporary but useful fiction. Had a draft of the mountain bike essay been aimed at the different constituencies mentioned in the essay—the Sierra Club, mountain bicycle manufacturers, property owners, or local newspapers—the writer might have gained a useful perspective in attempting to switch language and arguments to best address this more limited readership. Likewise, drafts of various papers written to young children, sympathetic classmates, skeptical professors, or sarcastic friends may also provide useful variations in the writing perspective.

In addition to working with a partner on this activity, take some extra time to check the essential elements of the argumentative research essay. Note whether the paper you are reviewing has these elements:

- a strong thesis
- sufficient and accurate support for claims
- a combination of summary, paraphrase, quotation, and synthesis
- strong counterclaims
- complete and correct citations
- a strong closing

Revising: Who's Game?

As you know, **revising** means reseeing, rereading, and rethinking your thoughts on paper until they match your intention. Mentally, it is conceptual work in which you focus on larger units of meaning. Be prepared to do a lot of copying, cutting, pasting, crossing out, and rewriting until you are satisfied with the ideas and where they appear in your paper.

12.6 Editing Focus: Integrating Sources and Quotations

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Apply citation conventions systematically in your work, understanding the concepts of intellectual property that motivate documentation conventions.
- Compose texts that integrate the writer's ideas with those from appropriate sources.

Direct quotations are most effective when you integrate them smoothly into the flow of your paper. You can do this by introducing the source and reason for the quotation in a phrase or sentence. Readers should be able to follow your meaning easily and to understand the relevance of the quotation immediately.

Introduce Quotations

Because readers need to know who is speaking, introduce quoted material with a **signal phrase** (sometimes called an attributory phrase). A signal phrase is a word or group of words that introduces borrowed or quoted material and informs readers of the source and purpose of the quotation. If the source is well-known, the name alone will be enough of a signal phrase. For example, a first-year student wrote, "Henry David Thoreau asserts in *Walden*, 'The mass of men lead lives of quiet desperation'" (5).

If your paper focuses on the published work itself, introduce a quotation with the work's title rather than the author's name, as long as the reference is clear—for example, "*Walden* sets forth one individual's antidote against the 'lives of quiet desperation' led by the working class in mid-nineteenth-century America" (Thoreau

5). If either the author or the source is not well-known, introduce the quotation with a brief explanation to give readers enough context to understand the quotation—for example, "Mary Catherine Bateson, daughter of renown anthropologist Margaret Mead, has become, in her own right, a student of modem civilization."

Select the Right Signal Phrase

Signal phrases (https://openstax.org/r/signalphrases) tell readers that the words or ideas that follow come from another source. Signal phrases often contain a verb that indicates the tone or intention of the author. To avoid monotony, vary the placement and words of the signal phrases you use. Note the differences, both slight and significant, in the following signal words and phrases as you integrate some of them into your draft:

acknowledges	denies	points out
admits	emphasizes	refutes
agrees	endorses	reports
argues	follows up	reveals
asserts	grants	says
believes	illustrates	shows
claims	implies	states
comments	insists	suggests
concedes	maintains	thinks
concludes	notes	writes
declares	observes	

TABLE 12.7

Quote Smoothly and Correctly

A direct quotation repeats an author's or speaker's exact words. Slight changes in wording are permitted, but these changes must be clearly marked. Although you cannot change what a source says, you do have control over how much of it you use. Because using quotations that are too long can imply that you have little to say for yourself, use only the part of the quotation needed to make your point. Quotations should support your points, not say them for you.

To shorten a quotation to include only the most important information, integrate it smoothly and correctly into the body of your paragraph to provide minimal disruption for readers. Unless the source quoted is itself the topic of the paper (as in a literary interpretation), limit brief quotations to no more than two per page and long quotations to no more than one every three pages. The following examples illustrate both correct and incorrect use of quoted material.

Original Passage

According to one film critic, the plot is exciting, but most of the dialogue "has the energy and impact of day-old gruel, without sugar, spice, or raisins." In fact, if I had to judge the film on dialogue alone, I'd say, "Save your money." Most of the characters alternate between a low and intermittent mumble, like a distant helicopter with engine trouble, and garbled whoops, as though speaking in tongues. Perhaps this is the director's way of trying

to mask a cornucopia of cliché-ridden, monosyllabic utterances, which, I agree, are not worth audience attention. Much of the acting is no better. However, some notable exceptions eclipse all the negatives of the script and the bit-part actors.

Omit or Substitute Words Judiciously

Cutting words for the sake of brevity is often useful, but do not distort meaning. Indicate omitted words by using ellipsis points (three dots within a sentence, four to indicate a complete sentence is being omitted). Use brackets ([ ]) to indicate any changes or additions.

Distorted Quotation

"The plot is exciting . . . the dialogue has . . . energy and impact."

The critic's words are taken out of context. Negatives are removed, as are the critic's dismissive comments about the film and the exceptions to the opinion.

Accurate Quotation

"The plot is exciting, but most of the dialogue 'has the energy and impact of day-old gruel. . . .' However, some notable exceptions eclipse all the negatives of the script."

Quotation Marks for Short Quotations

Embed brief quotations in the main body of your paper, and enclose them in quotation marks. The previous examples in this section are brief and would be embedded within paragraphs as normal sentences. According to MLA style guidelines, a brief prose quotation consists of four or fewer typed lines; a brief poetry quotation consists of three or fewer typed lines.

Block Format for Long Quotations

Set quotations of more than four lines in block format. Block quotations are indented but spaced the same as the normal text. Format block quotations as follows:

- Introduce the quotation in the last line of normal text with a sentence that ends with a colon.
- Indent one half inch, and then begin the quotation.
- Do not use quotation marks, as the indentation signals direct quotation.
- Include the page number, in parentheses, after the end punctuation.

For example, this student writing on Thoreau used a block quotation from *Walden* to describe the scenery in the author's own words:

> The scenery of Walden is on a humble scale, and, though very beautiful, does not approach to grandeur, nor can it much concern one who has not long frequented it or lived by its shore; yet this pond is so remarkable for its depth and purity as to merit a particular description. It is a clear and deep green well, half a mile long and a mile and three quarters in circumference, and contains about sixty-one and a half acres; a perennial spring in the midst of pine and oak woods, without any visible inlet or outlet except by the clouds and evaporation (195).

Explain and Clarify Quotations

Sometimes you will need to explain a quotation's relevance or meaning in the context of your discussion. For example, one student wrote, "In *A Sand County Almanac,* author Aldo Leopold invites modern urban readers to confront what they lose by living in the city and mentions the resulting 'spiritual dangers': 'supposing that breakfast comes from the grocery and . . . heat comes from the furnace' (6). Leopold sees city-dwellers as self-centered children, blissfully but dangerously unaware of how their basic needs are met."

If you need to clarify what a word or reference means, write your definition or explanation and enclose it

within square brackets.

Adjust for Clarity and Accuracy

A passage containing a quotation must follow all the rules of grammatical sentence structure: tenses should be consistent, verbs and subjects should agree, and so on. If the form of the quotation doesn't quite fit the grammar of your own sentences, you can either quote less of the original source, change your sentences, or make a slight alteration in the quotation. For example, you might write, "Leopold writes that city dwellers assume 'breakfast comes from the grocery'" or "Leopold writes that city dwellers '[suppose] that breakfast comes from the grocery.'" For more information on using quotations, see Editing Focus: Quotations and Quotations.

When to Quote

Reserve direct quotations for cases in which you cannot express ideas better yourself or when the exact words offer the strongest support for your ideas. Use quotations when the original words are especially precise, clear, powerful, or vivid, but ensure they do not substitute for your own thoughts.

- **Precise.** Use quotations when the words are important in themselves or when the author makes fine but important distinctions.

  "Government, even in its best state, is but a necessary evil: in its worst state, an intolerable one."—Thomas Paine

- **Clear.** Use quotations when the author's ideas are complex and difficult to paraphrase. "Paragraphs tell readers how writers want to be read."—William Blake
- **Powerful.** Use quotations when the words are especially authoritative and memorable.

  "You shall know the truth, and the truth shall make you free."—John 8:32, King James Version

- **Vivid.** Use quotations when the language is lively and colorful, when it reveals something of the author's or speaker's character.

  "A person who won't read has no advantage over one who can't read."—Mark Twain

12.7 Evaluation: Effectiveness of Research Paper

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Identify common formats and design features for different kinds of texts.
- Implement style and language consistent with argumentative research writing while maintaining your own voice.
- Determine how genre conventions for structure, paragraphing, tone, and mechanics vary.

When drafting, you follow your strongest research interests and try to answer the question on which you have settled. However, sometimes what began as a paper about one thing becomes a paper about something else. Your peer review partner will have helped you identify any such issues and given you some insight regarding revision. Another strategy is to compare and contrast your draft with the grading rubric similar to one your instructor will use. It is a good idea to consult this rubric frequently throughout the drafting process.

Rubric

Score	Critical Language Awareness	Clarity and Coherence	Rhetorical Choices
5 **Skillful**	The text always adheres to the "Editing Focus" of this chapter: integrating sources and quotations appropriately as discussed in Section 12.6. The text also shows ample evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The writer's position or claim on a debatable issue is stated clearly in the thesis and expertly supported with credible researched evidence. Ideas are clearly presented in well-developed paragraphs with clear topic sentences and relate directly to the thesis. Headings and subheadings clarify organization, and appropriate transitions link ideas.	The writer maintains an objective voice in a paper that reflects an admirable balance of source information, analysis, synthesis, and original thought. Quotations function appropriately as support and are thoughtfully edited to reveal their main points. The writer fully addresses counterclaims and is consistently aware of the audience in terms of language use and background information presented.
4 **Accomplished**	The text usually adheres to the "Editing Focus" of this chapter: integrating sources and quotations appropriately as discussed in Section 12.6. The text also shows some evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The writer's position or claim on a debatable issue is stated clearly in the thesis and supported with credible researched evidence. Ideas are clearly presented in well-developed paragraphs with topic sentences and usually relate directly to the thesis. Some headings and subheadings clarify organization, and sufficient transitions link ideas.	The writer maintains an objective voice in a paper that reflects a balance of source information, analysis, synthesis, and original thought. Quotations usually function as support, and most are edited to reveal their main points. The writer usually addresses counterclaims and is aware of the audience in terms of language use and background information presented.

TABLE 12.8

Score	Critical Language Awareness	Clarity and Coherence	Rhetorical Choices
3 **Capable**	The text generally adheres to the "Editing Focus" of this chapter: integrating sources and quotations appropriately as discussed in Section 12.6. The text also shows limited evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The writer's position or claim on a debatable issue is stated in the thesis and generally supported with some credible researched evidence. Ideas are presented in moderately developed paragraphs. Most, if not all, have topic sentences and relate to the thesis. Some headings and subheadings may clarify organization, but their use may be inconsistent, inappropriate, or insufficient. More transitions would improve coherence.	The writer generally maintains an objective voice in a paper that reflects some balance of source information, analysis, synthesis, and original thought, although imbalance may well be present. Quotations generally function as support, but some are not edited to reveal their main points. The writer may attempt to address counterclaims but may be inconsistent in awareness of the audience in terms of language use and background information presented.

TABLE 12.8

Score	Critical Language Awareness	Clarity and Coherence	Rhetorical Choices
2 **Developing**	The text occasionally adheres to the "Editing Focus" of this chapter: integrating sources and quotations appropriately as discussed in Section 12.6. The text also shows emerging evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The writer's position or claim on a debatable issue is not clearly stated in the thesis, nor is it sufficiently supported with credible researched evidence. Some ideas are presented in paragraphs, but they are unrelated to the thesis. Some headings and subheadings may clarify organization, while others may not; transitions are either inappropriate or insufficient to link ideas.	The writer sometimes maintains an objective voice in a paper that lacks a balance of source information, analysis, synthesis, and original thought. Quotations usually do not function as support, often replacing the writer's ideas or are not edited to reveal their main points. Counterclaims are addressed haphazardly or ignored. The writer shows inconsistency in awareness of the audience in terms of language use and background information presented.
1 **Beginning**	The text does not adhere to the "Editing Focus" of this chapter: integrating sources and quotations appropriately as discussed in Section 12.6. The text also shows little to no evidence of the writer's intent to consciously meet or challenge conventional expectations in rhetorically effective ways.	The writer's position or claim on a debatable issue is neither clearly stated in the thesis nor sufficiently supported with credible researched evidence. Some ideas are presented in paragraphs. Few, if any, have topic sentences, and they barely relate to the thesis. Headings and subheadings are either missing or unhelpful as organizational tools. Transitions generally are missing or inappropriate.	The writer does not maintain an objective voice in a paper that reflects little to no balance of source information, analysis, synthesis, and original thought. Quotations may function as support, but most are not edited to reveal their main points. The writer may attempt to address counterclaims and may be inconsistent in awareness of the audience in terms of language use and background information presented.

TABLE 12.8

12.8 Spotlight on … Bias in Language and Research

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Avoid bias and stereotyping in your writing.
- Evaluate sources for language bias and stereotyping.

When you begin any research project, it is important to have set checks and balances to ensure you are not

unknowingly imposing your own biases into your research. A **bias** is a personal and usually unreasoned judgment, or a prejudice. Although it may be impossible to function without any bias (good or bad), you *can* consider possible components of bias in your research. No document can be completely objective, for all documents are created by people who have been socialized in some way; therefore, it is helpful to think about the biases of authors of research documents. Many researchers are clear about their biases and state them in introductions to their writings, whereas others may use—or omit—evidence in a way that implies bias for or against the topic.

As a student researcher, seek to be as transparent and critically self-reflective as possible about your preconceptions and language use. Although you will revisit the concept of bias in source selection in The Research Process: Where to Look for Existing Sources, in this section you will look at bias in topic choice and language use.

Language Bias

Language bias (https://openstax.org/r/languagebias) refers to words and expressions that are offensive, demeaning, or prejudicial toward individuals or groups on the basis of gender, race, ethnicity, social class, appearance, physical or mental abilities, or sexual orientation. One form of language bias (https://openstax.org/r/languagebias1) is **sexist language** that includes only one gender. The most common occurrence is use of the word *man* or *men* to stand for all people—including those who are not male. Language has changed to be more inclusive, with terms such as *firefighter* replacing *fireman* and *mail carrier* replacing *mailman*.

Another kind of language bias focuses on people's health or abilities, indicating a person as a "victim" of a certain disease or "suffering from it." Use unbiased language to identify the person as someone "with X disease." Similarly, refer to a "person who is blind" rather than a "blind person." This kind of language focuses on the person, not the disease or ability.

To avoid language bias, follow these guidelines:

- Use currently accepted terminology when referring to groups of people. If you are writing about a group of people and are unsure of the proper terminology, research the most recent usage patterns before you write. The same is true for pronoun references, about which you can find more information in Editing Focus: Pronouns and Pronouns.
- Be sensitive when referring to people with disabilities by using a "people first" approach. For example, say "a person who uses a wheelchair" instead of "a wheelchair-bound person."
- Avoid stereotyping—that is, attributing positive or negative characteristics to people on the basis of groups to which they belong. Although not strictly linguistic, stereotyping comes through in making assumptions about people. A stereotypical attitude would be to assume that all or most rich people act in certain ways and, conversely, that all or most poor people act in certain ways. Another stereotypical attitude would be to assume that a person who comes from a particular area of the country adheres to a certain political agenda.

Assignment: Reviewing Your Research Essay for Language Bias

First, review your essay, and speculate as to biases or blocks you may have incorporated while researching and writing. Freewrite, reflecting on these possibilities. Next, go through your essay one section at a time, and highlight any people references, pronouns, biased language, and instances of possible stereotyping. Using the information above and your reflective freewrite, complete a bias chart like the one shown in Table 12.9. Next, exchange your essay with two other classmates to see whether they detect bias of which you were unaware. After receiving feedback from two or three people, form a group and discuss what each of you found and how to use alternative language or references. Finally, revisit your freewriting after collaborating with your classmates to reconsider what you wrote before. Add a section to the freewrite in which you relate what your

group discussed and what you may have learned from that discussion.

Essay Section	Essay Language	Possible Bias	Possible Revision

TABLE 12.9 Bias chart

Publish Your Work

After completing your argumentative research paper, you should have a product to be proud of. Your instructor may have a plan to publish papers written by class members, or you may be interested in publishing on your own and joining a wider scholarly conversation. Consider submitting your work to one of these journals that publish undergraduate research:

- *Butler Journal of Undergraduate Research (https://openstax.org/r/butlerjournalUG)*
- *Crossing Borders: A Multidisciplinary Journal of Undergraduate Scholarship (https://openstax.org/r/crossingborders)*
- *Liberated Arts: A Journal for Undergraduate Research (https://openstax.org/r/liberatedarts)*
- *Reinvention: An International Journal of Undergraduate Research (https://openstax.org/r/reinvention)*

In addition, if you have designed your research project as a solution to a local problem, consider finding venues to disseminate the information to those for whom it would be the most useful. This decision may mean adjusting the format, tone, language, and/or conventions of your work to address the needs of a specific audience.

12.9 Portfolio: Why Facts Matter in Research Argumentation

LEARNING OUTCOMES

By the end of this section, you will be able to:

- Distinguish between facts, inferences, and informed opinion and when to use each.
- Analyze how facts have shaped your research and composing processes.

As this assignment draws to a close, you will note that facts, examples, inferences, informed opinions, and personal experiences all provided believable evidence for your argument. However, be aware that the difference between facts and other evidence is that **facts** are verifiable. That Alaska has the most territory of all U.S. states is not up for question or interpretation; personal belief or opinion is irrelevant. Unless their accuracy is challenged, facts are essential in any research paper. Yet they can be misleading when used in certain ways or proved incorrect by later discovery. Hopefully, you have supported your research paper with verifiable factual information.

Inferences are conclusions based on a combination of facts and personal knowledge. For example, if you attend five different classes in five different academic departments and find no minority students in each class, you may infer that very few minority students attend the school. However, although your inference may seem reasonable, it is not a fact because you have not met all the students at the college, nor do you have access to enrollment figures.

Facts are not necessarily better or more important than inferences; they serve different purposes. Facts provide information, and inferences give that information meaning. Sometimes inferences are all you will have available. For example, statistics reflecting what "Americans" believe or do are only inferences about these groups based on information collected from a relatively small number of individuals. To be credible, inferences must be reasonable and based on factual evidence.

Expert opinion makes strong evidence. A forest ranger's testimony about trail damage caused by mountain bikes or lug-soled hiking boots reflects the training and experience of an expert. A casual hiker making the

same observation is less believable.

Personal testimony or informed opinion is based on direct personal experience. When someone has experienced something firsthand, their knowledge cannot be discounted easily. If you have been present at the mistreatment of someone, whether as the object or observer of the incident, your eyewitness testimony will carry weight.

Reflective Task

After reflecting on your argumentative research essay by considering bias, facts, and inferences, you now have the opportunity to reflect on what you learned through the research and writing process in general. Think critically about your writing process, reflect on each stage, and consider how this writing experience was similar to or different from others. Also, estimate roughly what percent of your sources are facts, examples, inferences, or informed opinion. As you reflect, answer the following questions in your notebook or as part of a cover letter for your research paper:

- How did you decide on the topic for your paper?
- How did you decide on the scope of your topic?
- What did you know about your topic before you began your research?
- What did you learn about your topic?
- What primary and secondary sources did you collect, and why?
- How did you arrive at a workable thesis?
- How did you determine which sources best supported your thesis?
- Did you rely most on facts, examples, inferences, expert opinion, or personal experiences? Why?
- What type of citation did you use for crediting material you did not write?
- How did collaboration with others help you as you wrote and revised your paper?
- How did the writing for this paper compare with other writing assignments? Was it easier or harder to write than others you have written?
- How did you manage the timing of your essay, from topic selection, to gathering sources, to writing and revising?
- What could you have done differently to make your writing process easier or more effective?
- What insights do have about yourself as a writer?

Further Reading

These sources address argument and are based on researched evidence.

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