3.2.4: Cause and Effect Analysis, Causes and Effects

Causes and Effects

Read this article to learn about cause and effect and how it compares to correlation. How can type of writing help you beyond the classroom? What professions rely on cause and effect reasoning?

Why are things like this? What is the effect, or result, of this? What causes this?

These questions guide authors as they analyze or argue about causal relationships, such as "What is the effect of a college education on income?" View fascinating reports on various cause/effect topics and then explore your own causal relationship. Improve your critical thinking skills.

Unlike explanations of processes, which follow a chronological order of events, cause and effect texts are deeply speculative and tentative, relying on causal reasoning and argument. Your purpose is to answer

1. Why are things like this?
2. What is the effect, or result, of this?
3. What is the cause of this?

Analyzing cause-and-effect relationships requires you to question how different parts and sequences interact with each other over time, which is often more difficult than reporting a chronological order of events, as you do when describing a process.
Why Write about Causes and Effects?

Human beings ask why perhaps more than any other question. When we listen to the nightly news and hear about the atrocities of war, we wonder, "What causes the hatred?" When we read about the violence plaguing our country, we ask, "Why does the United States lead the world in violent crimes?" When we read studies that indicate that 28 percent of women in America have been raped and that the occurrence of date rape is rising on college campuses, we ask, "Why is this happening?" When we read about environmental problems such as the depletion of the ozone layer, we wonder, "Why don't we do something about it?" Whenever we make decisions in our daily lives, we ask ourselves, "Why should I do this?"

On a daily basis, we seek to understand why events occurred by identifying the factors that led up to them. For example, if you were not doing well in school and on homework assignments, you might ask:

- Did my high school class(es) sufficiently prepare me for this class?
- Am I studying long enough?
- Am I taking effective lecture notes?
- Am I paying too much attention to the course texts and too little to the instructor's lectures?
- How is my attendance?
- Is my part-time job interfering too much with my school work?
- Am I using my time to study effectively?
- Are some of my friends having a negative influence on my study habits?
- Am I taking too many courses or putting too much time into another course?
- What can I do to improve my memory or study skills?

After asking these and other questions, you would eventually be able to identify a variety of causes for your poor performance, and once you recognize the causal relationship, you can set about realistically to improve your grade.

Cause-and-effect assignments are among the most interesting writing projects that you will tackle in school and in professional life. In school, teachers frequently assign process assignments. For example, humanities professors may ask for an analysis of what causes particular music genres or artistic genres to capture the imagination of popular culture; history professors, the impact of cultures on world history; social science professors, the effects of inventions on culture or the effect of gun control laws on violent homicide rates; business professors, the effects of changes in the interest rates on the economy.

Cause-and-effect texts are extremely common in professions--particularly the sciences, where researchers employ the scientific method to seek out cause-and-effect relationships. Writers commonly focus on analyzing causes or effects. A medical writer, for example, might explore the effects of a poor diet or the causes of a disease. A lawyer might argue the effect of an accident on his client. A sports writer might analyze why a team continues its losing or winning streak.

Diverse Rhetorical Situations

The purpose of many cause-and-effect texts is to explain the effects or causes of something. And the tone of these texts tends to be dispassionate and objective. In complex situations, however, the writer's purpose may shift from explaining
to speculating or even arguing about an interpretation. Sometimes writers argue about a particular cause or effect because they want to sell you something or because they want to change your mind on a policy or interpretation.

People write about causes and effects for a variety of communication situations, and they employ a variety of media. The shape and content of cause-and-effect reports tend to be more diverse than the shape and content of texts that explain subjects, concepts, or processes, as suggested in the table below.

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<th>Purposes</th>
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<td>Speculate</td>
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Rhetorical Analysis of Cause and Effect Texts

Consider the context, audience, purpose, and media invoked by the following readings. Also examine how ideas are developed in these texts. Are assertions grounded in personal experience, interviews with authorities, questionnaires, Internet and library research, or empirical research?

1. GHB on Campus: A subtext of a larger Web site created to educate readers about the dangers of GHB (the dangerous drug gamma hydroxy butyrate), this page summarizes the deadly effects of GHB on college campuses and urges readers to forward a listserv message to their friends, which reveals the deadly effects of GHB. Interestingly, a sidebar seeks readers’ input to a survey on GHB usage on college campuses. On the Project GHB home page, the authors explain that Mr. and Mrs. Shortridges began the site following the death of their son to a GHB overdose: This GHB website started out as a quick project with the sole purpose of getting some truth about GHB on the Internet. In doing their original searches for GHB on the Internet, the Shortridges found that most websites advocate its use, etc. Some Internet pages about GHB have seemingly educated reports about GHB. They offer recipes, kits for sale, and tips for "safe" experiences.

2. Rewards for Justice Program: Prevention of Terrorism Advertising Campaign: The U.S. government summarizes the successful effects of its rewards program for preventing terrorism. Its purpose appears to be to defend the program, advertise its effectiveness, and outline future rewards.

3. College graduation rate below 50 percent: Written by a reporter for CNN.com, this texts summarizes academic research conducted by the Council for Aid to Education. The research analyzed why 52 percent of students in public colleges and 45 percent of students in private colleges failed to graduate in 2000.

The researcher focused on greater access to college as the cause for the high dropout rate, suggesting that students who are being accepted into college are not prepared and that colleges need to do more to help these
Focus

When dealing with causes and effects, it is important to keep to a narrow topic. Time constraints and resources should always be kept in mind when pursuing a topic. Example: To find the reasons for world hunger would take years of research and/or tons of hours, so focus on a specific entity of a broad topic. Perhaps you could identify one country's efforts over the past few years.

Writers often bring focus to their work by claiming cause-and-effect relationships upfront, in their introductions. These "thesis statements" guide the writer and reader throughout the document. And they also offer clues as to the writer's voice, tone, and persona. Consider, for example, this tongue-in-cheek analysis of the The Dead Grandmother/Exam Syndrome and the Potential Downfall of American Society.

The basic problem can be stated very simply: A student's grandmother is far more likely to die suddenly just before the student takes an exam, than at any other time of year.

While this idea has long been a matter of conjecture or merely a part of the folklore of college teaching, I can now confirm that the phenomenon is real. For over twenty years I have collected data on this supposed relationship, and have not only confirmed what most faculty had suspected, but also found some additional aspects of this process that are of potential importance to the future of the country. The results presented in this report provide a chilling picture and
Development

Critical readers such as your instructors are quick to recognize shallow reasoning. College instructors expect you to cite multiple causes or effects when you are addressing a complex phenomenon.

For example, if you were exploring the effects of TV on children, your readers would most likely expect you to do more than attack the violence as being unethical or immoral. Likewise, if you were analyzing the causes of our nation’s high divorce rates, your instructors would expect you to do more than cite troubles with finances as the cause of divorces.

To help you develop a stronger sense of the level of detail your readers need to understand a particular cause-and-effect relationship, consider conducting research. What have others reported about the particular cause-and-effect relationship you are exploring? Read about what others have speculated or reported about your topic.

Below are some additional suggestions for developing your cause-and-effect report.

Check for Post Hoc Fallacies

Critical readers will expect you to develop the reasoning that demonstrates the cause and effect relationship isn’t due to chance. Academic readers are reluctant to assume causality between two actions because they are trained to identify post hoc (“after this”) fallacies. Essentially a post hoc fallacy occurs when an author assumes Event B was caused by Event A simply because it followed Event A; the connection is false because it is equally possible that Event B was caused by some other factor. For example, let us suppose that Bill has been jilted by his girlfriend Laura.

Because Laura argued with Bill last Friday night that he never spent any money on her and that she always has to pay for their dates, Bill might assume that she left him because he was cheap. However, this might not be the true reason for Laura’s dumping Bill. In fact, it could be that Laura was tired of Bill’s negative view of life. Perhaps she truly left Bill because she found him to be insensitive, boring, and uncommunicative.

Identify Sufficient and Necessary Causes

In some instances, you may be able to explain an effect by identifying sufficient causes and necessary causes.

A sufficient cause is one that can cause the effect to take place. By itself, a sufficient cause can explain a phenomenon or trend. For instance, according to the Mayo Clinic resource above, in order for someone to contract the HIV virus, any of the following forms of contact is a sufficient cause:

• Having sex
• Blood transfusions
• Sharing needles
• Pregnancy, delivery, or breastfeeding

However, frequently more than one sufficient cause is necessary to explain a phenomenon or trend. Three or four causes, for example, may be necessary to explain an effect. You cannot say, for example, that all one needs is a match...
to start a fire. You also need oxygen and something to burn. When describing physical phenomena such as how acid rain is produced, you may have little difficulty identifying sufficient causes. Explaining human behavior is rarely so simple, of course.

**Identify Remote and Speculative Causes**

When we face complicated questions and problems, we often are unable to identify sufficient causes so we must speculate about necessary causes – those causes that can result in the effect. For instance, no single cause precipitated the collapse of the Soviet Union, yet we could speculate that hunger, poor economic conditions, alienation from communism, and political corruption were all remote causes.

Because academic readers are sensitive to the complexity of most issues, they generally do not expect you to offer sufficient causes for complex problems. Instead, they expect you to speculate about possible causes and effects, while limiting the scope of your claims with qualifiers such as "usually", "may", "possible", "sometimes" or "most". No simple answer, no sufficient cause, can explain, for example, why some people become violent criminals or serial killers while others devote themselves to feeding the hungry or serving the helpless.

**Establish an Appropriate Voice**

You can choose from a range of tones, personas and voices. Some writers choose a contentious, argumentative tone. Alternatively, sometimes writers will soften their tone, perhaps assuming a milder persona than they actually feel, because they fear providing the information in a more straightforward, argumentative way would cause readers to look elsewhere. For example, in Tropical Forests and Climate Change, the Canadian Development Agency offers a terrifying, well-researched analysis of global warming, yet softens its message with this caveat in the introduction:

*Climate change predictions are difficult because of the complexity of the atmosphere and the interaction of the many variables involved.*

**Humanize Abstract Issues**

No matter how technical your subject is, you should keep in mind that you are writing to other people. When you sense that the human story is being lost in abstract figures or academic jargon, consider adding an anecdote of how the problem you are discussing affects particular people. For example, Melissa Henderson, a student writer, began her report on the effect of crack on babies with the following portrayal of a newborn, which she composed after reading numerous essays about the effect of crack cocaine on human fetuses:

*Lying restlessly under the warm lights like a McDonald's Big Mac, Baby Doe fights with all of his three pounds of strength to stay alive. Because he was born prematurely, Baby Doe has an array of tubes and wires extending from his frail body which constantly monitor his heartbeat, drain excess fluid from his lungs and alert hospital personnel in the event he stops breathing. As he lies in the aseptic incubator his rigid little arms and legs twitch and jerk as though a steady current of electricity coursed through his veins. Suddenly, without warning or provocation, he begins to cry a mournful, inconsolable wail that continues steadily without an end in sight. As the nurses try to comfort the tiny infant with loving touches and soothing whispers, Baby Doe's over-wrought nervous system can no longer cope. Suffering from sensory overload, he withdraws into the security offered in a long, deep slumber. Welcome to the world, Baby Doe, your mother is a crack cocaine addict.*
As you write drafts of your causal report, consider incorporating an anecdote – that is, a brief story about how people are influenced by your subject. For example, if you are researching the effects of a sluggish economy on our nation's poor, you might want to flesh out your statistics by depicting the story of how one homeless family lost their jobs, income, medical benefits, house, community, and hope.

**Use Visuals**

Although visuals are not required – in fact, many cause-and-effect texts do not use visuals – readers appreciate visuals, particularly ones that explain the cause-and-effect relationship being addressed. Consider, for example, this visual from the United States Environmental Protection Agency's Web site on Global Warming:

Readers particularly appreciate tables and graphs. Critical readers will often skim through a document's tables before reading the text:

Visuals can be used to influence readers at an emotional level. For example, at Project GHB's Tragedy Page, each picture links to an obituary, which tells the personal story of how these young people overdosed on GHB.

**Organization**

When analyzing causal relationships, you must reveal to readers how different parts and sequences interact with each other over time. Rather than merely reporting the order of events in chronological fashion as we do when describing a process, you need to identify the specific reasons behind the effects or causes. Your organization needs to reflect the logic of your analysis. This is often difficult because a single cause can result in many different effects. Likewise, an effect can have multiple causes.

For example, even a simple effect such as a minor car accident can have multiple causes. Yes, we could say that John D. caused the accident because he was driving while intoxicated. Yet if we knew more about John D.'s state of mind – if we knew, for instance, that he wasn't watching where he was going because he was thinking about his wife's threat to leave him – then we could identify additional causes for the accident. It could very well be that he was exhausted after a sleepless night. Or perhaps his personal predicament had nothing to do with the accident: Maybe the loss of his job that morning or his failure to have faulty brakes replaced is a more significant cause for the accident.

If we get really carried away with our reasoning, we could say that his former employers were responsible. After all, John D. would not have lost his job if the automobile manufacturer he worked for had not closed three of its American plants and moved manufacturing of some parts to plants in Mexico, Hong Kong, and Japan. In addition, we could also find potential causes for the accident by considering the other driver, Susan K. Maybe she rushed into the busy intersection expecting everyone else to make room for her because she was already late for an in-class exam. Perhaps if Susan K. had not consumed four pots of coffee, she would have been more mellow, more cautious, and less willing to risk her life to get to school on time.

**Use Formatting to Highlight Your Organization**

You can emphasize the most emphatic elements of your analysis by using headings and subheadings. A quick scan of any of the cause-and-effect readings highlights the popularity of headings. For example, below are the headings used by
the Canadian International Development Agency for their essay on Tropical Forests and Climate Change

- Is the world's climate changing?
- How are we causing climate change?
- Impact of climate change on forests
- Climate change convention and the Kyoto protocol
- Forestry's role in mitigating climate change
- Carbon trading markets
- Conclusions

You may also want to play with the formatting of your text to highlight the reasoning behind your causal analysis. Consider, for example, the Canadian International Development Agency’s Tropical Forests and Climate Change. These authors used callouts to define climate change terms that readers may not understand and they used call out boxes to emphasize important points in their essay:

*The Sustainable Forest Management Project in Cameroon, Trees for Tomorrow in Jamaica, and the Arenal Conservation and Development Project are CIDA-supported projects that work towards enhancing forest management in developing countries.*

*Expanding the area of forest cover by establishing tree plantations, agroforestry plantings, or analog forests enlarges the capacity of the terrestrial carbon sink. Trees are composed of approximately 50 percent carbon which they extract from the atmosphere during photosynthesis. The rate of carbon sequestration depends on the growth characteristics of the species, the conditions for growth where the tree is planted, and the density of the tree’s wood.*

*It is greatest in the younger stages of tree growth, between 20 to 50 years. Growth rates on commercial plantations in the tropics have been improving steadily as the results of tree improvement research have been applied. The technology to establish fast-growing plantations exists, as does the global expertise for establishing them. Growth rates of more than 30 cubic meters/hectare/year are now commonplace for intensive industrial pulp plantations in the tropics and FAO estimates that there are between 1.5 million and 2.0 million hectares of tree plantations established every year.*

*You may find it helpful to visually represent the structure of your argument, perhaps even including your organizational map as a visual for readers. For example, consider the following screenshot from the EPA's site on global warming. From this image, you understand four topics are being addressed and you understand the questions that guide the EPA's causal analysis:*

Introduce the Topic: Typically, texts that explore cause-and-effect relationships summarize the author's position upfront, in the introduction (see General to the Specific Strategies).

For example, back in 1985, Joseph K. Skinner began his influential essay “Big Mac and the Tropical Forests” with this dramatic opening--two sentences that immediately focus your attention on the causal connection he explicates throughout his essay: Hello, fast-food chains. Goodbye, tropical forests. However, you may want to avoid explicit thesis sentences and forecasting statements if your subject is likely to threaten the beliefs of your audience or if it is an inherently emotional subject. You may occasionally find it important to establish a credible persona first by reviewing what your readers are likely to believe about a causal relationship and then by stating your own opinion.
For example, assume you are writing an essay against spanking children. Now if your audience believes that spanking children is the proper way to discipline them, and if you claim in the introduction of the essay that spanking children may result in their becoming criminals, then your readers might assume you are an oddball and dismiss your essay. Yet if you intelligently discuss some of the reasons why parents and psychologists recommend spanking and then introduce extensive research from prominent journals and reports that all violent criminals were spanked as children, your readers might be more willing to listen to your reasoning.

Style: When grappling with difficult issues and concepts, your prose can understandably become unclear, dull, or cluttered. Eventually, though, as you continue to revise your drafts and further refine your message, you need to cut away the superfluous words, redundancies, and needless abstractions. You can make your language more interesting and more understandable by eliminating needless jargon; passive voice; lengthy, redundant sentences; or pompous and archaic language.

Provide Descriptive, Sensory Language: You can help your readers imagine your subject better by appealing to their senses. Whenever possible, describe how an object looks, sounds, tastes, feels, or smells.

For example, in this excerpt from Carl Sagan’s powerful essay on the effects of a nuclear war, “The Nuclear Winter”, notice how Sagan appeals to our visual sense in his description of the effect of a single nuclear bomb on a city:

In a two megaton explosion over a fairly large city, buildings would be vaporized, people reduced to atoms and shadows, outlying structures blown down like matchsticks and raging fires ignited. And if the bomb exploded on the ground, an enormous crater, like those that can be seen through a telescope on the surface of the Moon, would be all that remained where midtown once had been.

The lifeblood of effective writing is concrete and sensory language. A word, properly placed, can create a tone that angers or inspires a reader. Knowing the power of language to promote change, effective writers are selective in their use of concrete words – words that represent actual physical things like “chair” and “house” – and sensory words – words that appeal to our five senses. Selecting the right word or group of words is a crucial step in drawing your readers into your work so that they can fully understand your vision and ideas.

Note the masterful use of concrete and sensory words in this passage from a Newsweek essay, "Don't Go in the Water":

"Black mayonnaise": The problem for most landlubbers, of course, is that most of the effects of coastal pollution are hard to see. Bays and estuaries that are now in jeopardy – Boston Harbor, for example, or even San Francisco Bay – are still delightful to look at from shore. What is happening underwater is quite another matter, and it is not for the squeamish. Scuba divers talk of swimming through clouds of toilet paper and half-dissolved feces, of bay bottoms covered by a foul and toxic combination of sediment, sewage and petrochemical waste appropriately known as "black mayonnaise". Fishermen haul in lobsters and crab [sic] covered with mysterious "burn holes" and fish whose fins are rotting off. Offshore, marine biologists track massive tides of algae blooms fed by nitrate and phosphate pollution – colonies of floating microorganisms that, once dead, strangle fish by stripping the water of its life giving oxygen.

In addition to selecting an abundance of distinctive concrete words (such as sediment, sewage, and nitrate) and sensory words (foul, burn holes, feces), the authors have used powerful images and metaphors. Note, for example, the clouds of toilet paper. Even more potent is the image of "black mayonnaise". Can you imagine biting into a sandwich spread with such poison?
When Speculating, Use Qualifying Language: When addressing complex issues and processes, you adopt an appropriate speculative voice by using words like "may cause" or "could also". *Lorem ipsum dolor sit amet consectetur.*

Useful Qualifying Words and Phrases: may, might, usually typically, perhaps, can, I believe it seems likely. As an example of carefully chosen qualifying words, consider the following passage from the US EPA's Web site on global warming impacts:

- Rising global temperatures are expected to raise sea level, and change precipitation and other local climate conditions. Changing regional climate could alter forests, crop yields, and water supplies. It could also affect human health, animals, and many types of ecosystems. Deserts may expand into existing rangelands, and features of some of our National Parks may be permanently altered.

- Most of the United States is expected to warm, although sulfates may limit warming in some areas. Scientists currently are unable to determine which parts of the United States will become wetter or drier, but there is likely to be an overall trend toward increased precipitation and evaporation, more intense rainstorms, and drier soils.

- Unfortunately, many of the potentially most important impacts depend upon whether rainfall increases or decreases, which can not be reliably projected for specific areas.

The organizational structure you choose depends on the nature of the topic, your purpose, and your audience.

Given that compare-and-contrast essays analyze the relationship between two subjects, it is helpful to have some phrases on hand that will cue the reader to such analysis.

Table "Phrases of Comparison and Contrast"

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Writing a Comparison and Contrast Essay

First choose whether you want to compare seemingly disparate subjects, contrast seemingly similar subjects, or compare and contrast subjects. Once you have decided on a topic, introduce it with an engaging opening paragraph.
Your thesis should come at the end of the introduction, and it should establish the subjects you will compare, contrast, or both as well as state what can be learned from doing so.

The body of the essay can be organized in one of two ways: by subject or by individual points. The organizing strategy that you choose will depend on, as always, your audience and your purpose. You may also consider your particular approach to the subjects as well as the nature of the subjects themselves; some subjects might better lend themselves to one structure or the other. Make sure to use comparison and contrast phrases to cue the reader to the ways in which you are analyzing the relationship between the subjects.

Writing at Work

Many business presentations are conducted using comparison and contrast. The organizing strategies – by subject or individual points – could also be used for organizing a presentation. Keep this in mind as a way of organizing your content the next time you or a colleague have to present something at work.

Key Takeaways

• A compare-and-contrast essay analyzes two subjects by either comparing them, contrasting them, or both.
• The purpose of writing a comparison or contrast essay is not to state the obvious but rather to illuminate subtle differences or unexpected similarities between two subjects.
• The thesis should clearly state the subjects that are to be compared, contrasted, or both, and it should state what is to be learned from doing so.
• There are two main organizing strategies for compare-and-contrast essays.
  1. Organize by the subjects themselves, one then the other.
  2. Organize by individual points, in which you discuss each subject in relation to each point.
• Use phrases of comparison or phrases of contrast to signal to readers how exactly the two subjects are being analyzed.