



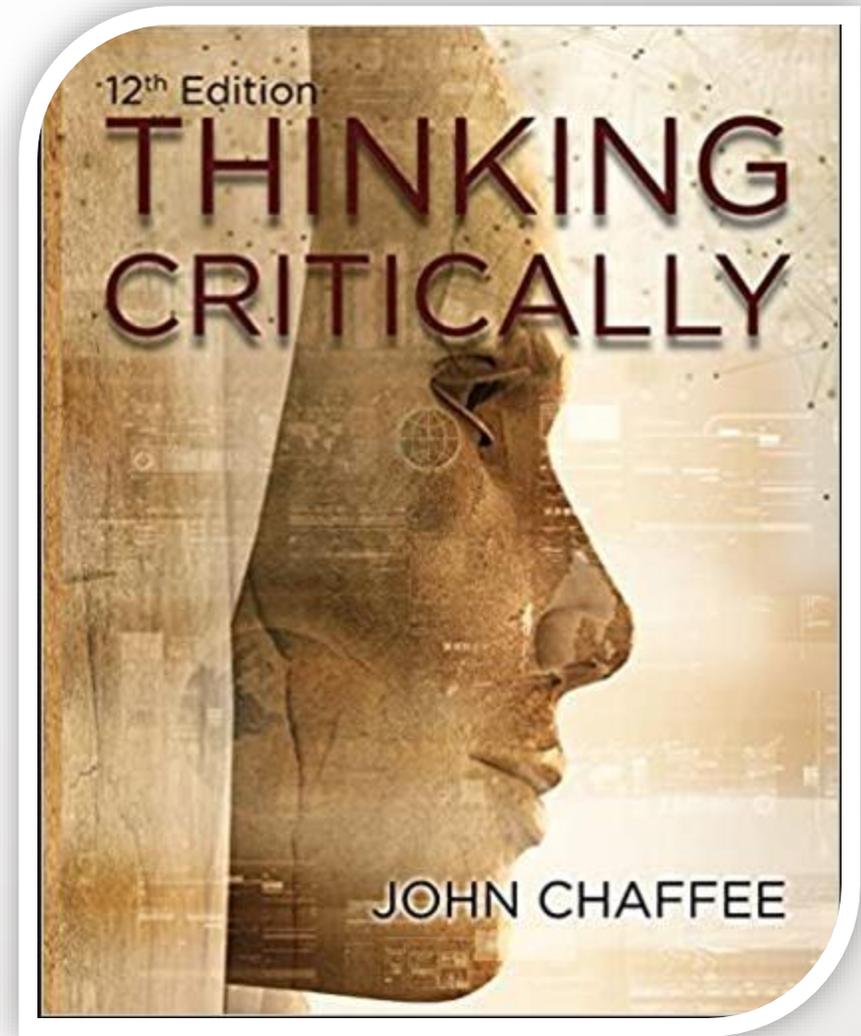
AUM

American University Of The Middle East

Chapter 6

Constructing Arguments & Reasoning Critically

Course Textbook:
Thinking Critically
12th Edition / 2019
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CENGAGE



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CHAPTER 6 OBJECTIVES

- After completing this chapter, you should be able to:
 1. Recognize Arguments
 2. Evaluate Arguments
 3. Use Cue Words Signaling Reasons
 4. Use Cue Words Signaling Conclusions
 5. Distinguish Valid Arguments from Invalid Arguments
 6. Reason Critically
 7. Use The Critical Thinker's Guide to Reasoning



Argument
A form of thinking in which certain reasons are offered to support a conclusion

Constructing Extended Arguments

- Identifying a thesis
- Conducting research
- Evaluating sources
- Organizing ideas

Evaluating Arguments

- Truth
- Validity
- Soundness

Recognizing Arguments

- Cue words

Constructing Arguments

- Decide
- Explain
- Predict
- Persuade

Understanding Deductive Arguments

- Application of a general rule
- Modus ponens*
- Modus tollens*
- Disjunctive syllogism

RECOGNIZING ARGUMENTS

- **Argument:** A form of thinking in which certain statements (reasons) are offered in support of another statement (a conclusion)
- **Reasons:** Statements that support another statement (known as a conclusion), justify it, or make it more probable.
- **Conclusion:** A statement that explains, asserts, or predicts on the basis of statements (known as reasons) that are offered as evidence for it.

RECOGNIZING ARGUMENTS

Cue words signaling reasons:

- since
- for
- because
- as shown by
- as indicated by
- given that
- assuming that
- in view of
- first, second
- in the first (second) place
- may be inferred from
- may be deduced from
- may be derived from
- for the reason that

RECOGNIZING ARGUMENTS

Cue words signaling conclusions:

- therefore
- thus
- hence
- so
- (which) shows that
- (which) proves that
- implies that
- points to
- as a result
- then
- it follows that
- thereby showing
- demonstrates that
- allows us to infer that
- suggests very strongly that
- you see that
- leads me to believe that
- allows us to deduce that
- consequently

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WE CONSTRUCT ARGUMENTS TO DECIDE

- **REASON:** Throughout my life, I've always been interested in all different kinds of electricity.
- **REASON:** There are many attractive job opportunities in the field of electrical engineering.
- **CONCLUSION:** I will work toward becoming an electrical engineer.
- **REASON:**
- **REASON:**
- **CONCLUSION:**

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WE CONSTRUCT ARGUMENTS TO EXPLAIN

- **REASON:** I was delayed in leaving my house because my dog needed an emergency walking.
- **REASON:** There was an unexpected traffic jam caused by motorists slowing down to view an overturned chicken truck.
- **CONCLUSION:** Therefore, I was late for our appointment.
- **REASON:**
- **REASON:**
- **CONCLUSION:**

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WE CONSTRUCT ARGUMENTS TO PREDICT

- **REASON:** Some people will always drive faster than the speed limit allows, whether the limit is 55 or 65 mph.
- **REASON:** Car accidents are more likely to occur at higher speeds.
- **CONCLUSION:** It follows that the newly reinstated 65-mph speed limit will result in more accidents.
- REASON:
- REASON:
- CONCLUSION:



WE CONSTRUCT ARGUMENTS TO PERSUADE

- **REASON:** Chewing tobacco can lead to cancer of the mouth and throat.
- **REASON:** Boys sometimes are led to begin chewing tobacco by ads for the product that feature sports heroes they admire.
- **CONCLUSION:** Therefore, ads for chewing tobacco should be banned.
- **REASON:**
- **REASON:**
- **CONCLUSION:**

EVALUATING ARGUMENTS

- To construct an effective argument, you must be skilled in **evaluating** the **effectiveness**, or **soundness**, of **arguments** that have already been constructed. You must investigate two aspects of each argument independently to determine the soundness of the argument as a whole:

1. How true are the reasons being offered to support the conclusion?

2. To what extent do the reasons support the conclusion, or to what extent does the conclusion follow from the reasons offered?



VALID ARGUMENTS vs. INVALID ARGUMENTS

- In addition to determining whether the reasons are true, evaluating arguments involves investigating the relationship between the reasons and the conclusion.
- **Valid Argument** An argument in which the reasons support the conclusion so that the conclusion follows from the reasons offered.
- **Invalid Argument** An argument in which the reasons do not support the conclusion so that the conclusion does not follow from the reasons offered.

EXAMPLE FOR INVALID ARGUMENT

- **REASON:** Barack Obama believes that it is vital for our national security that we develop alternative sources of energy.
- **REASON:** Barack Obama is the president of the United States.
- **CONCLUSION:** Therefore, we should develop alternative sources of energy.

This argument is **not valid** because even if we assume that the reasons are true, the conclusion does not follow.

TIME TO LOOK BACK

- Argument is a form of thinking in which certain reasons are offered to support a conclusion.
- Cue words for arguments help us identify “reasons” and “conclusions.”
- Arguments are inferences that we use to help us decide, explain, predict, and persuade.
- We evaluate arguments by investigating
- “How true are the supporting reasons?” and “Do the reasons support the conclusion?”
- A valid argument is one in which the reasons support the conclusion so that the conclusion follows from the reasons offered.



REASONING CRITICALLY

- **Reasoning** is the type of thinking that uses arguments—reasons in support of conclusions—to decide, explain, predict, and persuade.
- **Inductive reasoning** An argument form in which one reasons from premises that are known or assumed to be true to a conclusion that is supported by the premises but does not necessarily follow from them.
- **Fallacies** Unsound arguments that are often persuasive and appearing to be logical because they usually appeal to our emotions and prejudices, and because they often support conclusions that we want to believe are accurate

REASONING CRITICALLY

- **Empirical generalization** A form of inductive reasoning in which a general statement is made about an entire group (the “target population”) based on observing some members of the group (the “sample population”).
- **Scientific Method**
 1. Identify an event for investigation
 2. Gather information
 3. Develop a theory/hypothesis
 4. Test/experiment
 5. Evaluate results

APPLYING THE SCIENTIFIC METHOD

- Select one of the following situations or describe a situation of your own choosing. Then analyze the situation by working through the various steps of the scientific method listed directly after.
- **Situation 1:** You wake up in the morning with an upset stomach.
- **Situation 2:** Your grades have been declining all semester.
- **Situation 3:** (Your own choosing)



APPLYING THE SCIENTIFIC METHOD (Continued)

1. Identify an event or a relationship between events to be investigated. Describe the situation you have selected.
2. Gather information about the event (or events). Elaborate the situation by providing additional details. Be sure to include a variety of possible causes for the event. (For example, an upset stomach might be the result of food poisoning, the flu, anxiety, etc.)

THE CRITICAL THINKER'S GUIDE TO REASONING

The process of becoming an accomplished critical thinker and effective reasoner is a challenging quest that requires ongoing practice and reflection:

- What is my initial point of view?
- How can I define my point of view more clearly?
- What is an example of my point of view?
- What is the origin of my point of view?
- What are my assumptions?
- What are the reasons, evidence, and arguments that support my point of view?
- What are other points of view on this issue?
- What is my conclusion, decision, solution, or prediction?
- What are the consequences?

TIME TO LOOK BACK

- Fallacies are unsound arguments that are often persuasive and appearing to be logical because they usually appeal to our emotions and prejudices.
- The scientific method works on the assumption that the world is constructed in a complex web of causal relationships that can be discovered through systematic investigation.
- “The Critical Thinker’s Guide to Reasoning” is an organized approach for exploring complex issues.



SUGGESTED FILM

An Inconvenient Truth (2006)

Al Gore's documentary addresses the scientific causes of global warming as well as the social and political factors that support and/or inhibit its decrease.

Supersize Me (2004)

How does business and consumerism affect our health? What are the responsibilities of any business to customer health? Director Morgan Spurlock documents thirty days in which he only eats McDonald's food. He critically explores the physical and psychological effects of his experiment, raises ethical questions regarding the role of America's commercial food industry in contributing to obesity, and asks us to question the authority behind the food we eat.



QUIZ TIME

