

CRITICAL THINKING AND MORAL ARGUMENTS

LEARNING OBJECTIVES

After reading this chapter, you will be able to:

- 16.1 Articulate the relationship between logic and critical thinking.
 - 16.2 Explain the notions of induction, deduction, and semantics.
 - 16.3 Distinguish the various parts of an argument (premises and conclusion).
 - 16.4 Evaluate the structure of formal arguments for validity and soundness.
 - 16.5 Explain the distinction between formal and informal fallacies.
 - 16.6 Articulate various types of informal fallacies.
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16.1 LOGIC AND CRITICAL THINKING

Logic is the science of reasoning, the study of rational thought. Logic is something that we often employ in our daily lives, and yet few of us have ever studied the subject. Employing logical principles allows us to determine reasonable goals and to accomplish them in a straightforward manner. Logic is a formal discipline or branch of philosophy that has made tremendous progress since its early beginnings in the 4th century B.C.E. in ancient Greece. The formal study of logic can take years and is taught in universities around the world where numerous courses are taught at various levels of study on various types of logic, each one employing a

formalized structure and method. Following is a brief introduction to logic and critical thinking, which will grant a better foundation to organize our thoughts and analyze the thoughts of others. The introduction to critical thinking will also foster the analysis of various philosophical and ethical arguments presented in various readings.

Critical thinking is less formalized and less structured than logic. Critical thinking involves the engagement of a thinker in rational deliberation toward a resolution of a problem. There are various skills employed by one engaged in rational deliberation. The skills employed include empirical investigation, analysis of evidence, development of reasons in support of an argument, assessment of arguments, the ability to articulate and justify the analysis and arguments, and the ability to justify premises and conclusions. These are skills that are necessary in all aspects of our daily life as citizens, professionals, and persons in a civilized society. **Moral reasoning** is a species of critical thinking that is focused on the application of ethical theory as applied to various moral issues or topics. The goal of this text is to facilitate the application of these skills to a wide variety of ethical topics.

“He who knows only his own side of the case knows little of that.”

John Stuart Mill

To begin, are some ways of approaching problems better than others? For example, if your car does not start, would it be reasonable at the first sign of trouble to tear out the engine and install a new one? Most of us would say, “Of course not!” What, then, would you do first? It seems that the first thing you would do is to check the gas, after that you might check the battery, and if that did not work, then you might try to get a jump start. All of these options seem reasonable—all are proper steps to take before going further. The person who began by pulling apart the engine when the car would not start would seem, at best, eccentric and, at worst, crazy in our eyes.

16.2 INDUCTION, DEDUCTION, AND SEMANTICS

The field of logic is often divided into three distinct but interrelated sub-fields: **induction**, **deduction**, and **semantics**. Induction is a process that humans employ on a regular basis. Induction allows us to complete our daily activities (even if we are unaware of the formal philosophical name).

When we draw conclusions based on empirical evidence (observations we make of the world), we are making inferences that are inductive in nature. For example, we turn on a light switch because in the past we have discovered that flipping the switch turns on the lights. We swipe our finger over the front of our smartphone to answer a call as we know that this will normally answer the phone call. The two preceding examples are rather mundane, but they epitomize our natural process of understanding the world.

The rationality of induction was called into question by the Scottish philosopher **David Hume**. He claimed that the beliefs derived by induction were simply based on custom and habit on our parts. Ultimately, regardless of Hume's objections to the rationality of the process, it is a process that we employ all the time—with a great deal of success. Without induction (and the ability to draw inferences based on experience), we would be at a loss to do much of anything in our daily lives.



INDUCTION IN REAL LIFE

Can you think of examples of inductions you make on a regular basis? Would you be able to make it through your day without using these inductive inferences?

Deductive reasoning, also known as formal logic, employs a formalized structure and is similar in many ways to the proofs that are created in geometry. For example, in geometry you begin with basic axioms and from those you can generate geometric proofs to demonstrate what follows from those basic assumptions. The same is true in formal logic. By beginning with basic premises, you can work to prove new things.

“A deduction is speech in which, certain things having been supposed, something different from those supposed things results of necessity because of their being so.”

Aristotle—*Prior Analytics* Section I.2, 24b18-20

SEMANTICS AND MEANING



Semantics is the study of the meaning of words. From the very beginning of Western philosophy, people have struggled to understand the relationship between words, meanings, and thoughts. The ancient Greeks understood the importance of language. The Sophist philosopher **Gorgias** famously claimed that the world, if it actually existed and was actually comprehensible, was impossible to communicate to other people because words could not accurately represent our ideas. Socrates, one of the most influential of the ancient Greek philosophers, was constantly in search of the definition and meaning of words. In the process of attempting to determine the nature of concepts such as “beauty” and “justice,” he devised a theory of meaning and the function of language.

Language is used in a variety of ways to express our thoughts and feelings regarding the world. There are three important aspects of language. Language is used to command action, convey emotion, and provide descriptions of the world. A central problem in the interpretation of meaning is the fact that a single sentence can command action, convey emotion, and provide a description of the world. In other words, a single statement can have multiple meanings. As such, it is both useful and necessary to make a distinction between a sentence, which is a group of words, and a proposition, which is the meaning of those words.

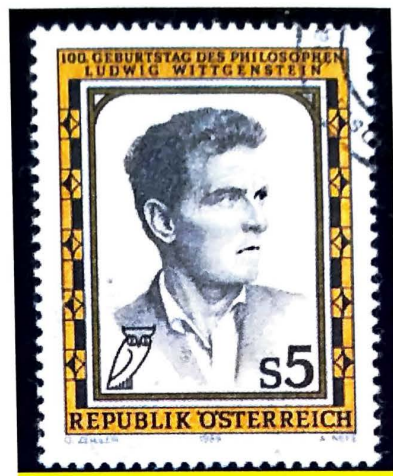


The fact that a sentence is distinct from the proposition it asserts can be seen by a simple example: “I am studying philosophy,” and “Estou estudando a filosofia,” as well as “Я изучаю философию”—all affirm the same proposition. Each sentence, although written in different languages, convey the same propositional meaning. It conveys the same idea, in a number of different languages, English, Portuguese, and Russian. The meaning that these sentences convey is clear. Further, this statement can be either true or false.

MORAL PHILOSOPHERS: Ludwig Wittgenstein (1889–1951)

Ludwig Wittgenstein was a major 20th-century analytic philosopher whose work had importance for continental philosophy as well, especially for the study of philosophy of language. He spent a great deal of time studying logic and semantics and trying to understand the intricacies of human language.

Wittgenstein famous said, “Whereof one cannot speak, thereof one must be silent” *Tractatus Logico-Philosophicus* (1921). Wittgenstein’s first work, *Tractatus Logico-Philosophicus* (1921), forged a new school of philosophy that dominated philosophical thought for the first half of the 20th century. His last work, entitled *Philosophical Investigations* (1953), is considered by many to be one of the most important philosophical works of the 20th century. Many philosophers consider Wittgenstein to be the most influential Western philosopher since Immanuel Kant (1724–1804).



Stamp printed by Austria, shows Ludwig Wittgenstein, circa

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THE CONNECTION BETWEEN LOGIC AND CRITICAL THINKING

There is a clear connection between logic and critical thinking. Logic is a formalized way to evaluate knowledge claims and to establish that which is unknown based on that which is known. As Charles Sanders Peirce, the founder of the first originally American school of philosophy, pragmatism, said, “The object of reasoning is to find out, from the consideration of what we already know, something else which we do not know. ... Consequently, reasoning is good if it be such as to give a true conclusion from true premises, and not otherwise.”

Some of these attempts to justify our beliefs are better than others, but all are rational in that they attempt to provide reasons for the position or view that they support. To be a critical thinker, one must employ and apply various formal and informal principles of logic.

16.3 ARGUMENTS: PREMISES AND CONCLUSIONS

The reasons that we employ to support a position on an ethical issue or topic are called the **premises**, whereas the position itself is known as the **conclusion**. Taken together, the premises and the conclusion form an **argument**. At times, in a verbal discussion, the tone of voice gives a clue as to which sentences offer reasons and which indicate the conclusion to be proved. Further, in a language such as English, there exist certain key words that make conclusions easy to spot. These key words are often indicative of a conclusion: “therefore,” “thus,” “consequently,” “hence,” “so,” “it follows that,” or “the implications are.” Carefully choosing our words and listening carefully to the words of others are both crucial steps toward having a meaningful discourse regarding moral issues. Underlying any philosophical argument is the meaning of the terms involved. The meaning of words is tied directly to semantics.

16.4 STRUCTURE OF FORMAL ARGUMENTS

Formal logic employs a structured **argument** with a set of **premises** and one **conclusion**.

Argument	1. If P then Q	Premise
	2. <u>P</u>	Premise
	3. Therefore Q	Conclusion

The structure of the argument must be valid. This means that the argument must employ a structure that in principle can yield true conclusions based on true premises. This quality is known as **validity**. If the structure of the argument is valid, then the argument has the correct formal structure. Furthermore, if the premises are true, then the conclusion must be true. An argument is **sound** if and only if (1) the argument is valid and (2) all of its premises are true.

For example, consider the following argument:

1. All men are mortal.
2. Socrates is a man.
3. Therefore, Socrates is mortal.

The argument is valid because it has a correct logical structure and the conclusion is true based on the premises. It is sound because the premises are true.

The following is an example of a valid argument that is not sound:

1. All birds with wings can fly.
2. Penguins have wings.
3. Therefore, penguins can fly.

Because the first premise is false, the argument, though valid, is not sound.

FORMAL FALLACIES

1. $P \rightarrow Q$
 2. P _____
 3. Q
- Valid

1. $P \rightarrow Q$
 2. Q _____
 3. P
- Invalid

Example A

1. If I live in Florida $\rightarrow$ I live in the United States
 2. I live in Florida
 3. Therefore I live in the United States
- Valid

Example B

1. If I live in Florida $\rightarrow$ I live in the United States
 2. I live in the United States
 3. I live in Florida
- Invalid

It is easy to see that Example B is invalid, because just because someone lives in the United States, it does not follow that he or she lives in Florida. A person could live in Florida, but she also could live in Texas, North Carolina, or any one of the states or territories within its possession. Whereas it is clear to see that if you live in Florida, then you must also reside within the United States.

Let's consider another example from the French philosopher René Descartes:

1. If you do not have a soul, you do not have any feelings.
2. If you do not have any feelings, you do not have any rights. (As you cannot experience pain)
3. Animals do not have souls.
4. Therefore, Animals do not have rights.

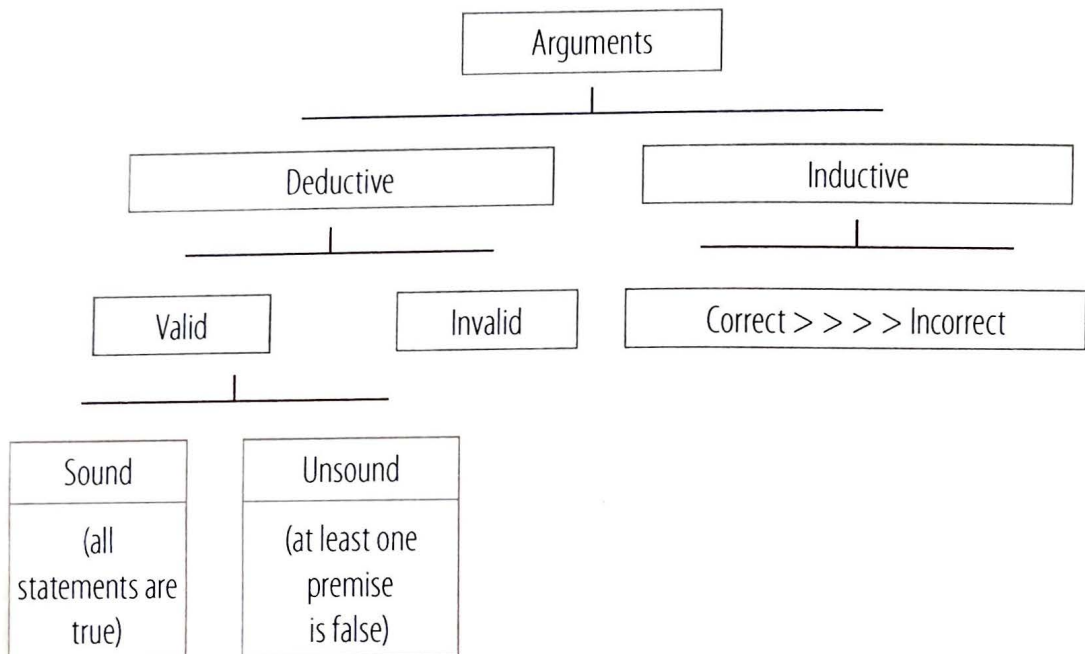
To begin there is a fundamental issue with this argument—the notion of a soul. Please allow me to activate my brand new “soul detector app” on my smartphone. Unfortunately there is no such application because souls, if they do exist, are not currently detectable by any sort of scientific means (although many spiritualists would dispute the claim that they are entirely undetectable).

Descartes is assuming in the earlier argument that animals do not have a soul and that as a result they feel no pain, but such a premise is highly contentious—in fact, various religions feel that animals do have souls. Ultimately, this argument fails, as the status of animals having souls is unclear. In fact, Descartes is committing a fallacy (to be discussed in the next section)—the appeal to religion. He is assuming based on his reading of his holy book, the Christian Bible, that animals do not have souls. Without other, secular, nonreligious evidence, this supposition is not supported.

Arguments can be employed for or against all of the ethical issues considered within this textbook. An argument may take the form of an essay in favor of marriage equality or an essay against abortion rights. As students you must sift through the narrative of the essay and find the key points. The points are the premises in support of the conclusion being drawn in the essay. In most cases, those main points, taken together, can be used to reconstruct a deductive argument in favor of the position. At the same time, the essay's author may have committed any of the informal fallacies, discussed in the next section, that may weaken or make moot his or her argument. Note: *There are various formal fallacies, but discussion of such fallacies belongs to a formal logic course and is beyond the scope of this textbook.*



QUICK LOOK: TYPES OF LOGICAL ARGUMENTS



16.5 INFORMAL FALLACIES

The term **fallacy** is used to denote an unacceptable way of thinking or reasoning. Fallacies can be committed regarding the actual logical structure of the argument as discussed earlier. These are known as formal fallacies. These are often easy to recognize. Yet the vast majority of the fallacies that are relevant to the issues discussed in this textbook are informal fallacies. Such fallacies can involve fallacies of definition, relevance, authority, ambiguity, or presumption.

To identify an **informal fallacy** one must understand the context, meaning, and relevance of the premises to the conclusion. Informal fallacies commit a fallacy of relevance in that they either explicitly or implicitly assume premises that are not relevant or do not support the conclusion.

FALLACY OF DEFINITION

This fallacy involves various types of improper definition, which may be employed in a philosophical or ethical argument: incongruous, circular, or obscure.



The **fallacy of incongruous definition** is committed when the definition is either too broad or too narrow to distinguish the word defined. The term “planet” cannot be used to define all of the objects in the solar system. Such a definition of all of the objects in the solar system would exclude various other types of objects that are also found there such as moons, asteroids, and comets.

The **fallacy of circular definition** is committed when the definition involves a synonymous term (or a word that means the same thing). For example, if one were to define “mathematics” as the “science of mathematical analysis,” then this would be a circular definition. In such a case the fallacy would have been committed. If one does not know what mathematics is, then one will not know what mathematical thinking is.

The **fallacy of obscure definition** is committed when something is defined in a metaphorical way. For example, Plato defined the term “time” in the following way: *as the moving images of eternity*. Time, which is certainly a complex subject, is not clearly defined by Plato’s definition, as it is metaphorical and obscure. Aristotle could also be accused of committing the same fallacy as Plato when he defines man as “the rational animal.” The definition sounds poetic, but seems to be lacking clarity.

APPEAL TO FORCE (ARGUMENTUM AD BACULUM)



In the **appeal to force** fallacy, the premise used to support a particular conclusion is one of violence, force, or harm. For example, your boss says, “If you vote for Clinton for president, then I will fire you.” In this case, you may feel coerced into voting for another candidate given the threat of being fired. In another real-world case, a geneticist coerced his female employees into giving him their ovum for research into human cloning, with the threat of being fired. It should be clear that a threat of violence is entirely irrelevant to the truth of a conclusion of an argument.

APPEAL TO PITY OR EMOTION (ARGUMENTUM AD MISERICORDIAM)

The **appeal to pity** or emotion fallacy involves an appeal to the emotions of another in an effort to prove the conclusion of an argument. As opposed to playing on our fears, as in the previous fallacy, this fallacy plays on

our sympathies. For example, when a student, in an effort to get a grade changed, begins to cry or weep to the professor, the student is committing this fallacy.

Another example of this type is often found in the court of law: When an accused perpetrator asks for leniency and begins to cry for all to see, the perpetrator is appealing to pity or emotion. It would be a mistake to find someone innocent simply because you feel sorry for him or her. In such a case, it might be appropriate to reduce his or her sentence, depending on how believable you find his or her remorse or appeal for mercy may be. Whether this is another application of this fallacy is contentious, since in practice, convicted felons are often given lesser sentences when they appear to acknowledge and regret their actions.

APPEAL TO IGNORANCE (*ARGUMENTUM AD IGNORANTIAM*)

The **appeal to ignorance** fallacy can take two forms. The first form is as follows: arguing from the absence of proof to the presence of disproof. Or to say it in another way, to argue from the absence of evidence for the confirmation of a hypothesis to evidence for the disconfirmation of said hypothesis. In simpler terms still: By lacking evidence for something being true, you assume it must be false. For example, a person could say, “Well I have never seen an atom; therefore, atoms do not exist.”

The second form is as follows: arguing from the absence of disproof to the presence of proof. For example, one could say, “There is no evidence that leprechauns do not exist; therefore, leprechauns do exist.”

The fallacy of the appeal to ignorance is often committed in a philosophical context. For example, an atheist may claim that because there is “no” evidence for the existence of God, God does not exist. In other words, given our ignorance or lack of positive evidence, such a being does not exist. By the same token, a theist may say that because there is no evidence against the existence of God, God must exist. Generally some sort of positive, empirical evidence is necessary to support a conclusion and arguing for a stance based on ignorance is a fallacy.

APPEAL TO OR AGAINST THE PERSON (*ARGUMENTUM AD HOMINEM*)

The **appeal to or against the person fallacy** is committed when one argues that a proposition must be true or false, because of the person making the argument. This is a fallacy in reasoning—you should attack the argument, not the person making it. For example, if Britney Spears were to give a lecture on some of the finer points of parenting, and you argued that she must be wrong because of who she is, regardless of what she actually says, then you have committed this fallacy. It might be the case that she has learned some important life lessons and has something important to say on this topic.

APPEAL TO OR AGAINST THE DELIVERY (*FALLACY OF DELIVERY*)

The **fallacy of delivery** involves attacking the person (not the argument presented) because of how someone states the argument. Ultimately, regardless of how straightforwardly, bluntly, or rudely someone states his or her position, what matters in regard to critical thinking is the analysis of the argument itself. This fallacy may make it extremely painful to admit that the person presenting a position is right. Regardless of the way the position is stated, those feelings are irrelevant to the question of sound reasoning. In such a case you may be committing both the fallacy of *appeal to or against the person* and *appeal to emotion*, as you are allowing your own feelings to cloud your ability to reason.

APPEAL TO AUTHORITY (*ARGUMENTUM AD AUCTORITATEM*)

In the **appeal to authority** fallacy, one claims that an argument is true simply because it is given by an authoritative source (without any additional understanding or evidence). At times this fallacy may be a difficult argument to detect, as we trust in authoritative sources for many of our beliefs about the world.

For example, if you argue that something must be true because of who is saying it, regardless of their arguments in support of their thesis, then you have committed this fallacy. You assume that former Secretary of State Colin Powell's view on weapons of mass destruction (WMDs) must be

true, simply because he is claiming it to be so. Assuming the truth of his statements on the subject before the United Nations paved the way for the longest war in American history, one based on factual statements by an expert (the U.S. Secretary of State) that were not true: there were no WMD in Iraq before the American invasion of that country.



Authorities and experts have a place in our society, but they must have clear arguments, reasons, and evidence in support of or in favor of their views—they cannot simply support their views solely on the basis of their positions.

APPEAL TO THE MAJORITY (*ARGUMENTUM AD POPULUM*)

The fallacy of **appeal to majority** can be witnessed daily as we watch television advertisements. Television ads often make reference to the fact that four out of five doctors prescribe brand X or that most people prefer one brand of soda to another. When the only reason given for the superiority of one product over another is the fact that more people use it, then the fallacy of appeal to the majority has been committed. Simply because more people believe that something is correct, it does not follow that it actually is. As you may know, the majority of Americans voted for George W. Bush at least once (officially twice) for the office of president of the United States, yet it does not follow, solely on the basis of popular opinion, that he was the best candidate for the job. The majority may be correct about a particular belief, but they may also be mistaken. To rely solely on majority opinion is a mistake in reasoning.

FALSE CAUSE (*NON CAUSA PRO CAUSA*)



Any argument in which the premises do not provide support for a conclusion claiming a causal connection is said to commit the **fallacy of false cause**. Generally false cause is based on a mistaken belief between two events and a claim that there is a connection between them. For example, a superstitious person may believe that his or her bad luck is the result of breaking a mirror or that a lucky charm had bearing upon winning a game of chance. The establishment of a causal connection between two objects or events is often an empirical question that can be addressed by proper investigation. In principle a lucky charm such as a rabbit's foot might influence luck, but proving that would require empirical evidence that demonstrated that a person's luck improved while in possession of the object—although the mechanisms producing the luck might be unknown.



Recently researchers in England conducted an experiment where one group of test subjects were told they were going to use a “lucky putter” used by a British Open golf champion to putt whereas a control group was given a “regular” putter. In the end, the lucky group outperformed the control group. Neither group knew they were, in fact, using the same putter. The experiment has been repeated several times, and each time the “lucky” putter outperformed the “regular” putter. The researchers believe that luck is not the cause factor but rather people’s internal perceptions of luck.

EQUIVOCATION OR AMBIGUITY OF TERMS

Equivocation or **ambiguity of terms** involves a conflation (or mixing or combining) of definitions of terms used in an argument. This may also involve the deliberate or accidental ambiguity in a term used in an argument. The ancient Greek Sophist Gorgias noted that it was impossible to communicate our ideas because they could not adequately be captured by words. Although this extreme position is clearly false, Gorgias was right to note that unless a word conveys the same meaning to everyone involved, communication can be impossible. For example, if your boyfriend says you are “dating” but dating to him means he is dating you and three other girls, whereas you think it means he is dating you exclusively, then there is a clear ambiguity in the use of the term “dating.” This confusion is a result of the lack of clarity regarding the term “dating” and the deliberate (or accidental) commission of the fallacy of equivocation by your boyfriend.



An example from applied ethics topic of animal rights may be useful to understand and recognize this fallacy. Some extreme proponents of animal rights argue that because animals have “rights” and people have “rights,” people and animals must have the same “rights.” This argument is based on an ambiguity of terms—in this case the term “right.” The word “rights” is being used to denote something animals have, and the term “rights” is being used to denote something people have, but the rights each group has have not been specified.

Most reasonable people would not argue that people have the same rights as animals. Certainly animals cannot vote, drive a car, or own a home—so clearly the rights possessed by people and animals are different. The confusion arises as a result of equivocation. The confusion, again, is a result of the fact that the supposed rights of animals and the rights of people have not been specified in the previous statements, thereby leading to the confusion. Equivocation

can be avoided by clarifying the terms involved either by clearly defining the terms and/or by elaborating on their meaning so that all parties involved in the discussion have a clear conception of their intended use.



Have Words Ever Led You to Confusion?

Words can have multiple meanings. There are times we think they mean one thing, but the person using them means something else entirely. There was once a married couple who used to fight all of the time because of the simple declarative statement: Take out the trash! The husband thought it meant “take out the kitchen garbage and take it to the curb.” His wife, on the other hand, meant “go around the house, empty the trash from every garbage can, replace each with a new bag, collect it together, and, then, finally, take it to the curb.” Have you found yourself in a situation like this where the meaning of words led to confusion?

APPEAL TO RELIGION, CULTURE, OR TRADITION

The question of whether morality depends on God or society is covered in detail later in this book, but it is also worth mentioning here: Our desire to appeal to social or cultural artifacts that appear to transcend the individual is evident throughout the history of humanity. Many have attempted to establish that a proposition is, in fact, true because it corresponds with a “truth” of religion, culture, or social traditions. These people would have committed the **appeal to religion fallacy**, the **appeal to culture fallacy**, or the **appeal to tradition fallacy**.

Some argue that because it has always been that way, it should continue to be that way. They have cited examples such as “traditional marriage” or “traditional family” to argue against interracial marriage or gay marriage. Traditions can be important, but they are not all equally rational nor do they always support a logical argument.

Others may appeal to religion or religious dogma to support an argument. Given a myriad of different religions, it is difficult, if not impossible, to establish the “right one” that has the “right beliefs.” Further, even those people with the same religion read their own holy books in different ways—which only serves to further muddle any argument based on religion. If you want to demonstrate the truth of your religious beliefs to others, you ought to endeavor to employ secular arguments, which will transcend and set of religious principles. As Socrates, in Plato’s dialogue

Euthyphro, first noted, there are insurmountable difficulties in basing a moral argument on any God's command.

Finally, some may appeal to culture as a justification for their beliefs or practices. Although the diversity of thought and cultures is to be embraced, not all cultural beliefs are rational or ethical. There are a number of problems with relying on culture to establish our beliefs—it is clear that cultural beliefs differ from one culture to another, and this would lead to a type of cultural relativism; belief X would be true in Brazil, but not true in Germany (or vice versa).

To further demarcate this distinction and the analysis of cultural beliefs, it is useful to rely on a distinction between descriptive relativism and cultural relativism. **Descriptive relativism** says that as a matter of empirical fact, different cultures have different beliefs about truth or morality. This seems to be true. In other words, different societies have different epistemic or moral standards. (But those standards might be wrong.) **Cultural relativism**, on the other hand, as it is traditionally defined argues that any belief that is endorsed by a culture is true. This view claims that knowledge, truth, and the beliefs of ethics are determined by each culture. In other words, what is right and wrong ought to be determined by culture. Any and all epistemic or moral standards that are endorsed by a culture are true. This leads to relativism as different cultures believe different things to be moral. If culture X believes in zombies, then zombies are real, and if culture Y does not believe in zombies, then zombies are not real.

If cultural relativism were true, then the beliefs of any culture would be valid and ethical. A simple example demonstrates the problems with this view: the Nazis. If cultural relativism is true, then it was entirely ethical for the Nazis to behave as they did during World War II—committing genocide, as it was an ingrained cultural belief that there existed inferior races that were subhuman. Clearly this is false and the actions of the Nazi were unethical and reprehensible.

Ultimately, although it may be the case that the beliefs of religion, culture, or tradition may be true, an independent reason or independent evidence ought to be supplied to establish their veracity. It is generally a fallacy to simply cite religious tenets, cultural beliefs, or traditional beliefs as a substantial reason in a persuasive argument.

IRRELEVANT CONCLUSION/ RED HERRING (*IGNORATIO ELENCHI*)

The **irrelevant conclusion** or **red herring fallacy** involves arguing about something that is not at issue to confuse the argument. For example, some opponents of stem cell research argue that it is the same as abortion. Although in both cases a potential person ceases to exist, there are a number of morally relevant differences between the two cases. The most basic difference is one involves ending the biological life of an embryo or fetus that is within a woman's womb and the other involves ending the biological life of a blastocyst (the scientific term for a human embryo at five to seven days after conception) in a laboratory—which is many steps removed from becoming a living person.

In stem cell research, the cells involved are pre-embryonic—the cells are obtained *in vitro* (in a laboratory setting) and harvested in a test tube between five to seven days after conception. Cells may be taken from an aborted fetus (but they are not the same as the stem cells generated in the laboratory and not as useful for research). Furthermore, cell research is not the primary purpose of abortion. Although the cases may seem similar, conflating (or mixing) the issue of abortion into the debate on stem cell research is a case of committing the red herring fallacy.

BEGGING THE QUESTION (*PETITIO PRINCIIPI*)

When one “**begs the question**” against an argument, he or she structures a position so that it is beyond question—regardless of empirical facts. The most basic example would be if someone says, “I am going to flip the coin, heads I win, tails you lose”—in either case they win and you lose.

Another example of “begging the question” may be taken from psychology. Some philosophers argue that Freudian psychological theory is structured in such a way that it begs the question against opponents. For example, if the theory predicts that a particular individual ought to display a particular neurosis then the theory is taken to be correct. On the other hand, if the individual does not present the particular neurosis, then the Freudian will claim that the individual is “repressed” and the theory is still correct.

In this way, irrespective of the empirical evidence, the theory cannot be disproven because it will claim to be right regardless of what symptoms are displayed by a patient. This is not to say that the theory is false,

although critics such as Adolf Grünbaum and Jean-Paul Sartre have stated that Freud's theory is at best false, at worse pseudoscientific, but rather it is to say that some philosophers argue that it begs the question against opponents obviously Freudian psychologist will disagree.

CIRCULAR REASONING (*CIRCULUS IN PROBANDO*)

Circular reasoning appears in arguments that assume the conclusion in one or more of the premises. There are any number of examples of this type of reasoning, the most famous, perhaps, being the Cartesian Circle, named for René Descartes. In his work, *Meditations on First Philosophy* (1641) he argues that "I now seem to be able to lay it down as a general rule that whatever I perceive very clearly and distinctly is true." From this he argues that he clearly and distinctly conceives of God and then argues that because God does in fact exist, all ideas that are clear and distinct are also true. A deductive version of the argument based on his book is as follows:

1. I think therefore I am.
2. I have a *clear and distinct conception* of God.
3. In order for a lesser being to have an idea of a greater being, that idea must originate with the greater being.
4. Therefore, God Exists. _____

5. God exists and is good; therefore, he would not let the evil demon deceive us (or allow humanity to commit systematic errors in reason and judgment) about the world.
6. Therefore, the world exists as we perceive it so long as we have a *clear and distinct conception* of it.

The problem with this argument is that Descartes assumes clear and distinct ideas are true so that he may prove the existence of God, but then uses the existence of God to prove that clear and distinct ideas are, in fact, true. This is clearly circular reasoning and leads to the failure of the entire chain of reasoning.

CONCLUSION

Ultimately one must be aware of the various formal and informal flaws in reasoning and thinking. Critical thinking and analysis will be necessary in all facets of the course, as we consider ethical theories as well as applied ethical issues. As a student, you will encounter various opinions and arguments, but not all of the opinions and arguments you will encounter are well-founded, good, or sound judgments. With training and practice, you will be able to better formulate your own views and express them convincingly to others. Beyond that, the skills you develop in this course will be applicable to your other courses and daily life.

If your history professor asks you to isolate the main causes of the Iraq War, then that requires empirical investigation (you need to gather facts), analysis (you need to think about what the facts mean or entail), and finally need to develop a thesis (a position or stance on an issue). The same skills are necessary in the workforce as well. If your boss asks you to resolve an issue or solve a problem, you may try to “google” it, but it may require insight, thought, and analysis—skills again you develop and enhance in this course.



READINGS: CHARLES S. PEIRCE: HOW TO MAKE OUR IDEAS CLEAR

In this essay, the American philosopher and logician attempts to elaborate on how to make our ideas clear. He begins by considering that our ideas can be either clear or obscure or distinct and confused. He goes on to consider the shortcomings of Descartes' method. He goes on to consider how careful examination of our beliefs and yet how they can be expanded upon to help us develop a firmer grasp of logic and reason in reference to our ideas.

Whoever has looked into a modern treatise on logic of the common sort, will doubtless remember the two distinctions between *clear* and *obscure* conceptions, and between *distinct* and *confused* conceptions.... A clear idea is defined as one which is so apprehended that it will be recognized wherever it is met with, and so that no other will be mistaken for it. If it fails of this clearness, it is said to be obscure.

From *Popular Science Monthly*, Volume 12, January 1878 by Charles S. Peirce.

This is rather a neat bit of philosophical terminology; yet, since it is clearness that they were defining, I wish the logicians had made their definition a little more plain. Never to fail to recognize an idea, and under no circumstances to mistake another for it, let it come in how recondite a form it may, would indeed imply such prodigious force and clearness of intellect as is seldom met with in this world.

On the other hand, merely to have such an acquaintance with the idea as to have become familiar with it and to have lost all hesitancy in recognizing it in ordinary cases, hardly seems to deserve the name of clearness of apprehension, since after all it only amounts to a subjective feeling of mastery which may be entirely mistaken. I take it, however, that when the logicians speak of "clearness," they mean nothing more than such a familiarity with an idea, since they regard the quality as but a small merit, which needs to be supplemented by another, which they call *distinctness*.

A distinct idea is defined as one which contains nothing which is not clear. This is technical language; by the *contents* of an idea logicians understand whatever is contained in its definition. So that an idea is *distinctly* apprehended, according to them, when we can give a precise definition of it, in abstract terms....

...When Descartes set about the reconstruction of philosophy, his first step was to (theoretically) permit skepticism and to discard the practice of the schoolmen of looking to authority as the ultimate source of truth. That done, he sought a more natural fountain of true principles, and thought he found it in the human mind; thus passing, in the most direct way, from the method of authority to that of apriority, as described in my first paper. Self-consciousness was to furnish us with our fundamental truths, and to decide what was agreeable to reason. But since, evidently, not all ideas are true, he was led to note, as the first condition of infallibility, that they must be clear. The distinction between an idea *seeming* clear and really being so never occurred to him....

Such was the distinction of Descartes, and one sees that it was precisely on the level of his philosophy. It was somewhat developed by Leibnitz. This great and singular genius was as remarkable for what he failed to see as for what he saw. That a piece of mechanism could not do work perpetually without being fed with power in some form, was a thing perfectly apparent to him; yet he did not understand that the machinery of the mind can only transform

knowledge, but never originate it, unless it be fed with facts of observation....

Descartes labored under the difficulty that we may seem to ourselves to have clear apprehensions of ideas which in truth are very hazy, no better remedy occurred to him than to require an abstract definition of every important term. Accordingly, in adopting the distinction of *clear* and *distinct* notions, he described the latter quality as the clear apprehension of everything contained in the definition; and the books have ever since copied his words. There is no danger that his chimerical scheme will ever again be over-valued. Nothing new can ever be learned by analyzing definitions. Nevertheless, our existing beliefs can be set in order by this process, and order is an essential element of intellectual economy, as of every other. It may be acknowledged, therefore, that the books are right in making familiarity with a notion the first step toward clearness of apprehension, and the defining of it the second. But in omitting all mention of any higher perspicuity of thought, they simply mirror a philosophy which was exploded a hundred years ago....

The very first lesson that we have a right to demand that logic shall teach us is, how to make our ideas clear; and a most important one it is, depreciated only by minds who stand in need of it.... It is terrible to see how a single unclear idea, a single formula without meaning, lurking in a young man's head, will sometimes act like an obstruction of inert matter in an artery, hindering the nutrition of the brain, and condemning its victim to pine away in the fullness of his intellectual vigor and in the midst of intellectual plenty.

Many a man has cherished for years as his hobby some vague shadow of an idea, too meaningless to be positively false; he has, nevertheless, passionately loved it, has made it his companion by day and by night, and has given to it his strength and his life, leaving all other occupations for its sake, and in short has lived with it and for it, until it has become, as it were, flesh of his flesh and bone of his bone; and then he has woken up some bright morning to find it gone, clean vanished away like the beautiful Melusina of the fable, and the essence of his life gone with it....



A postage stamp printed in France showing an image of René Descartes, circa 1996.

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The principles set forth in the first part of this essay lead, at once, to a method of reaching a clearness of thought of higher grade than the “distinctness” of the logicians. It was there noticed that the action of thought is excited by the irritation of doubt, and ceases when belief is attained; so that the production of belief is the sole function of thought. All these words, however, are too strong for my purpose. It is as if I had described the phenomena as they appear under a mental microscope.

Doubt and Belief, as the words are commonly employed, relate to religious or other grave discussions. But here I use them to designate the starting of any question, no matter how small or how great, and the resolution of it. If, for instance, in a horse-car, I pull out my purse and find a five-cent nickel and five coppers, I decide, while my hand is going to the purse, in which way I will pay my fare. To call such a question Doubt, and my decision Belief, is certainly to use words very disproportionate to the occasion.

To speak of such a doubt as causing an irritation which needs to be appeased, suggests a temper which is uncomfortable to the verge of insanity. Yet, looking at the matter minutely, it must be admitted that, if there is the least hesitation as to whether I shall pay the five coppers or the nickel (as there will be sure to be, unless I act from some previously contracted habit in the matter), though irritation is too strong a word, yet I am excited to such small mental activity as may be necessary to deciding how I shall act. Most frequently doubts arise from some indecision, however momentary, in our action. Sometimes it is not so. I have, for example, to wait in a railway-station, and to pass the time I read the advertisements on the walls. I compare the advantages of different trains and different routes which I never expect to take, merely fancying myself to be in a state of hesitancy, because I am bored

with having nothing to trouble me. Feigned hesitancy, whether feigned for mere amusement or with a lofty purpose, plays a great part in the production of scientific inquiry. However the doubt may originate, it stimulates the mind to an activity which may be slight or energetic, calm or turbulent. Images pass rapidly through consciousness, one incessantly



Doubt, expression and people

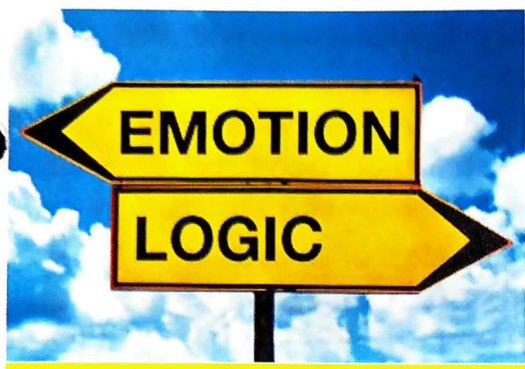
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melting into another, until at last, when all is over—it may be in a fraction of a second, in an hour, or after long years—we find ourselves decided as to how we should act under such circumstances as those which occasioned our hesitation. In other words, we have attained belief...

...And what, then, is belief? It is the demi-cadence which closes a musical phrase in the symphony of our intellectual life. We have seen that it has just three properties: First, it is something that we are aware of; second, it appeases the irritation of doubt; and, third, it involves the establishment in our nature of a rule of action, or, say for short, a *habit*. As it appeases the irritation of doubt, which is the motive for thinking, thought relaxes, and comes to rest for a moment when belief is reached. But, since belief is a rule for action, the application of which involves further doubt and further thought, at the same time that it is a stopping-place, it is also a new starting-place for thought. That is why I have permitted myself to call it thought at rest, although thought is essentially an action. The *final* upshot of thinking is the exercise of volition and of this thought no longer forms a part; but belief is only a stadium of mental action, an effect upon our nature due to thought, which will influence future thinking.

The essence of belief is the establishment of a habit; and different beliefs are distinguished by the different modes of action to which they give rise. If beliefs do not differ in this respect, if they appease the same doubt by producing the same rule of action, then no mere differences in the manner of consciousness of them can make them different beliefs, any more than playing a tune in different keys is playing different tunes. Imaginary distinctions are often drawn between beliefs which differ only in their mode of expression. ...Instead of perceiving that the obscurity is purely subjective, we fancy that we contemplate a quality of the object which is essentially mysterious; and if our conception be afterward presented to us in a clear form we do not recognize it as the same, owing to the absence of the feeling of unintelligibility. So long as this deception lasts, it obviously puts an impassable barrier in the way of perspicuous thinking; so that it equally interests the opponents of rational thought to perpetuate it, and its adherents to guard against it....

Another such deception is to mistake a mere difference in the grammatical construction of two words for a distinction between the ideas they express. In this pedantic age, when the general mob of writers attended so much more to words than to things, this error is common enough. When I just said that thought is an *action*, and that it consists in a *relation*, although a person performs an action but not a relation, which can only be the result



Choosing between Emotion and logic, opposite direction sign. Emotional versus logical choice.

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ence to how we shall act on a given occasion, as when we listen to a piece of music, why we do not call that thinking.

To develop its meaning, we have, therefore, simply to determine what habits it produces, for what a thing means is simply what habits it involves. Now, the identity of a habit depends on how it might lead us to act, not merely under such circumstances as are likely to arise, but under such as might possibly occur, no matter how improbable they may be. What the habit is depends on *when* and *how* it causes us to act. As for the *when*, every stimulus to action is derived from perception; as for the *how*, every purpose of action is to produce some sensible result. Thus, we come down to what is tangible and conceivably practical, as the root of every real distinction of thought, no matter how subtle it may be; and there is no distinction of meaning so fine as to consist in anything but a possible difference of practice....

IV

Let us now approach the subject of logic, and consider a conception which particularly concerns it, that of *reality*. Taking clearness in the sense of familiarity, no idea could be clearer than this. Every child uses it with perfect confidence, never dreaming that he does not understand it. As for clearness in its second grade, however, it would probably puzzle most men, even among those of a reflective turn of mind, to give an abstract definition of the real.

Yet such a definition may perhaps be reached by considering the points of difference between reality and its opposite, fiction. A figment is a product of somebody's imagination; it has such characters as his thought impresses upon it. That those characters are independent of how you or I think is an external reality. There are, however, phenomena within our own minds,

of an action, yet there was no inconsistency in what I said, but only a grammatical vagueness.

From all these sophisms we shall be perfectly safe so long as we reflect that the whole function of thought is to produce habits of action; and that whatever there is connected with a thought, but irrelevant to its purpose, is an accretion to it, but no part of it. If there be a unity among our sensations which has no refer-

dependent upon our thought, which are at the same time real in the sense that we really think them. But though their characters depend on how we think, they do not depend on what we think those characters to be. Thus, a dream has a real existence as a mental phenomenon, if somebody has really dreamt it; that he dreamt so and so, does not depend on what anybody thinks was dreamt, but is completely independent of all opinion on the subject. On the other hand, considering, not the fact of dreaming, but the thing dreamt, it retains its peculiarities by virtue of no other fact than that it was dreamt to possess them. Thus we may define the real as that whose characters are independent of what anybody may think them to be....

.... Different minds may set out with the most antagonistic views, but the progress of investigation carries them by a force outside of themselves to one and the same conclusion. This activity of thought by which we are carried, not where we wish, but to a fore-ordained goal, is like the operation of destiny. No modification of the point of view taken, no selection of other facts for study, no natural bent of mind even, can enable a man to escape the predestinate opinion. This great hope is embodied in the conception of truth and reality. The opinion which is fated to be ultimately agreed to by all who investigate is what we mean by the truth, and the object represented in this opinion is the real. That is the way I would explain reality.

But it may be said that this view is directly opposed to the abstract definition which we have given of reality, inasmuch as it makes the characters of the real depend on what is ultimately thought about them. But the answer to this is that, on the one hand, reality is independent, not necessarily of thought in general, but only of what you or I or any finite number of men may think about it; and that, on the other hand, though the object of the final opinion depends on what that opinion is, yet what that opinion is does not depend on what you or I or any man thinks. Our perversity and that of others may indefinitely postpone the settlement of opinion; it might even conceivably cause an arbitrary proposition to be universally accepted as long as the human race should last. Yet even that would not change the nature of the belief, which alone could be the result of investigation carried sufficiently far; and if, after the extinction of our race, another should arise with faculties and disposition for investigation that true opinion must be the one which they would ultimately come to. "Truth crushed to earth shall rise again," and the opinion which would finally result from investigation does not depend on how anybody may actually think. But the reality of that which is real does depend on the real fact that investigation is destined to lead, at last, if continued long enough, to a belief in it....

...We have, hitherto, not crossed the threshold of scientific logic. It is certainly important to know how to make our ideas clear, but they may be ever so clear without being true. How to make them so, we have next to study. How to give birth to those vital and procreative ideas which multiply into a thousand forms and diffuse themselves everywhere, advancing civilization and making the dignity of man, is an art not yet reduced to rules, but of the secret of which the history of science affords some hints.



HOW DO YOU DECIDE?

Imagine you visit a physician and ask him to diagnose why you are having a persistent sore throat. He may say it is the result of a virus or perhaps a cold. He could also say you need surgery. This doctor has decided that he wants to perform an adenotonsillectomy (the removal of the adenoids and tonsils) on you. This is a costly procedure, which will make lots of money for him, but luckily you have insurance and will have a small insurance co-pay. Should you ask for more information, such as the details of the diagnosis? Are you concerned that the doctor may be motivated by money as opposed to your health? Or should you simply have the surgery?

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CHAPTER PHILOSOPHERS

David Hume (1711–1776) was known as “The Great Skeptic”. He denies the rationality of inductive logic, causality (cause and effect), and of the self. Since science is based upon the concepts of induction and causality he denies science. He says that the veracity (or truth) of most scientific concepts is un-provable by rational means. In his view, most “knowledge” is just custom or habit, and is not justified by reason. 

Ludwig Wittgenstein (1889–1951) was a major 20th-century analytic philosopher whose work had importance for continental philosophy as well, especially for the study of philosophy of language. He spent a great deal of time studying logic and semantics and trying to understand the intricacies of human language.

Gorgias (435–380 B.C) was an ancient Greek philosopher. He was part of a group of philosophers known as sophists. Sophists generally argue that truth is relative or is unattainable. Gorgias went so far as to deny that anything exists. He also maintained that if anything did exist, it was incomprehensible. Failing that he said people could not communicate ideas.

KEY TERMS

Appeal to authority a fallacy committed when one claims that an argument is true simply because it is given by an authoritative source.

Appeal to culture fallacy a fallacy committed when one attempts to establish that a proposition is, in fact, true because it corresponds with a “truth” of religion, culture, or social traditions. 

Appeal to force a fallacy in which the premise used to support a particular conclusion is one of violence, force, or harm.

Appeal to ignorance a fallacy that involves arguing from the absence of proof to the presence of disproof and arguing from the absence of disproof to the presence of proof.

Appeal to majority a fallacy that relies solely on majority opinion.

Appeal to or against the person fallacy is committed when one argues that a proposition must be true or false, because of the person making the argument.

Appeal to pity a fallacy that involves an appeal to the emotions of another in an effort to prove the conclusion of an argument.

Appeal to religion fallacy a fallacy committed when one attempts to establish that a proposition is, in fact, true because it corresponds with a “truth” of religion, culture, or social traditions.

Appeal to tradition fallacy a fallacy committed when one attempts to establish that a proposition is, in fact, true because it corresponds with a “truth” of religion, culture, or social traditions.

Argument a process of reasoning formed when the premises and the conclusion are taken together.

Begging the question fallacy a fallacy committed when one “begs the question” against an argument; he or she structures a position so that it is beyond question—regardless of empirical facts.

Circular reasoning a reasoning that appears in arguments that assume the conclusion in one or more of the premises.

Conclusion a position on an ethical issue or topic for which premises or reasons are employed to support.

Critical thinking the process of purposeful, reflective judgment. Critical thinking manifests itself in giving reasoned and fair-minded consideration to evidence, conceptualizations, methods, contexts, and standards to decide what to believe or do.

Cultural relativism a principle that any belief that is endorsed by a culture is true. This view claims that knowledge, truth, and the beliefs of ethics are determined by each culture.

Deduction a process of reasoning in which a conclusion follows necessarily from the premises presented, so that the conclusion cannot be false if the premises are true.

Descriptive relativism a doctrine that says as a matter of empirical fact, different cultures have different beliefs about truth or morality.

Equivocation/ambiguity of terms a fallacy that involves a conflation (or mixing or combining) of definitions of terms used in an argument. This may also involve the deliberate or accidental ambiguity in a term used in an argument.

Fallacy a term used to denote an unacceptable way of thinking or reasoning. There are two kinds of fallacy: formal and informal.

Fallacy of circular definition a fallacy committed when the definition involves a synonymous term (or a word that means the same thing).

Fallacy of delivery a fallacy that involves attacking the person (not the argument presented) because of how someone states the argument.

Fallacy of false cause a fallacy that involves any argument in which the premises do not provide support for a conclusion.

Fallacy of incongruous definition a fallacy that is committed when the definition is either too broad or too narrow to distinguish the word defined.

Fallacy of obscure definition a fallacy that is committed when something is defined in a metaphorical way.

Induction any form of reasoning in which the conclusion, though supported by the premises, does not follow from them necessarily.

Informal fallacy a fallacy committed when they either explicitly or implicitly assume premises that are not relevant or do not support the conclusion.

Irrelevant conclusion/red herring fallacy a fallacy that involves arguing about something that is not at issue to confuse the argument.

Logic the science that investigates the principles governing correct or reliable inference, the science of reasoning.

Moral reasoning is a species of critical thinking that is focused on the application of ethical theory as applied to various moral issues or topics.

Premises the reasons that we employ to support a position on an ethical issue or topic.

Semantics the study of the meaning of words.

Sound argument is one that is not only valid but all of its premises are true.

Valid describes an argument or inference such that the truth of the premises entails or implies that conclusion must be true.