GLOSSARY

accent, fallacy of  Accent is one of several informal fallacies. In one form, it consists of placing an unusual stress on a word and drawing a conclusion on the basis of that stress. Example: “Thou shalt not steal” is a moral law, presumably applying to everyone. But you commit the fallacy of accent if you argue, “The commandment is that ‘thou shalt not steal,’ so it is okay if I do a bit of pilfering.” In another form, it consists of taking claims out of context and, as a result, shifting the meaning of the claim. Example: Joan had been arguing against euthanasia. In the course of her argument, she raised an objection to her position, part of which was the principle, “It is a moral principle that we never should allow people to suffer needlessly.” If you reply to her argument by saying, “Even Joan says it is a moral principle that we never should allow people to suffer needlessly. Opposing euthanasia is a case of allowing people to suffer needlessly. So, on Joan’s principles we should not oppose euthanasia,” the appeal to the principle apart from the context is an instance of the fallacy of accent. In yet another form, which is related to the second, it consists of incomplete quotation, where the incompleteness shifts the meaning. Example: “It is a divine commandment that ‘Thou shalt . . . commit adultery,’ so fooling around a bit is morally correct—indeed, we are commanded by God to do it!”

accident, fallacy of  The fallacy of accident occurs if you apply one of a pair of general principles in a situation where it does not apply but the other one does. Example: It is a general principle that you should aid others when you can. It is also a general principle that you should not aid others during a test. To attempt to justify giving your friend the answer to a test question by appealing to the first principle would be an instance of the fallacy of accident.

accuracy  Accuracy is a critical-thinking virtue. It is a freedom from error.

act-deontology  Act-deontologists maintain that there is a method whereby one can determine the moral value or obligation of a specific action without appealing to rules. The consequences of an action can play some role, but not the only role, in determining the moral property of an action or state.

affirming the antecedent  Affirming the antecedent (modus ponens) is a valid argument form. Where \( p \) and \( q \) are variables that can be replaced by any statement, affirming the antecedent is an argument of the following form: If \( p \), then \( q \). Therefore, \( q \).

affirming the consequent  Affirming the consequent is a fallacious argument form. Where \( p \) and \( q \) are variables that can be replaced by any statement, an argument commits the fallacy of affirming the consequent if it has the following form: If \( p \), then \( q \). Therefore, \( p \). While the argument form is invalid, arguments of this form provide some inductive evidence for the truth of the conclusion.

ambiguous, ambiguity  A word is ambiguous if it has more than one meaning.

ampersand (\&)  The ampersand represents conjunction. A statement of the form \( p \& q \) is true if and only if both \( p \) and \( q \) are true.

amphiboly  Amphiboly is an informal fallacy of ambiguity that rests upon loose sentence construction, sentence construction that may be interpreted in more than one way.
Example: You can’t take the elevator down to the first floor, since the elevator is out of service. Notice that the sign says, “In case of fire elevators are out of service.”

**analogy** An analogy is a comparison between two or more objects. Analogies can be used to illustrate points—“the desert sizzled like bacon in a pan”—to explain—“validity is like a conventional light switch: just as the switch is either on or off, so a deductive argument is either valid or invalid”—or to argue, that is, to provide reasons for believing that since two or more objects are similar in a certain number of ways, it is likely that they are also similar in additional ways. See also basis of an analogy, ground of an analogy, objective extension of an analogy, and problematic extension of an analogy.

**analytic proposition** An analytic proposition is a proposition whose truth depends only on the meaning of the words in the proposition.

**antecedent** In a conditional statement of the form “If p, then q,” the antecedent is the *if* clause.

**appeal to authority** The fallacy of appeal to authority is committed when one cites a person or group or practice as an authority in a field in which that person, group, or practice does not have the credentials necessary to establish that it is an authority in that field. Examples: John Madden endorses Ace Hardware, so Ace Hardware must be good. Warning: There are times when a person is known for his or her work in one field, but he or she has significant credentials in another field as well. So, before screaming “appeal to authority,” you should check out the person’s background.

**appeal to force** The fallacy of appeal to force assumes some implicit threat of force is a sufficient reason to engage in an action or hold a belief.

**appeal to pity** The fallacy of appeal to pity assumes that the fact that someone is suffering from some kind of distress is a sufficient condition to engage in an action or hold a belief.

**argument** An argument is a discourse in which the presumed truth of certain statements, the premises, are taken as evidence for another statement, the conclusion. All arguments are either valid deductive arguments or inductive arguments. Examples: (1) Each crow I have observed over the past ten years has been black, so all crows are black (inductive argument). (2) Your car and my car are of the same make, model, and year. Your driving habits and my driving habits are very similar. I needed a valve job at 80,000 miles. Therefore, it is likely that you will need a valve job sometime after your car reaches the 75,000 mile mark (analogy: inductive argument). (3) All humans are mortals. Socrates is a human. Therefore, Socrates is a mortal (categorical syllogism: deductive argument).

**argument to the best explanation** An argument to the best explanation is an inductive argument based on a comparison of alternative explanations of an event.

**argumentum ad hominem** See personal attack

**argumentum ad baculum** See appeal to force

**argumentum ad misericordium** See appeal to pity

**argumentum ad populum** See mob appeal

**Aristotelian interpretation of categorical propositions** According to the Aristotelian interpretation of categorical propositions, both universal and particular propositions have existential import.

**arrow** (→) The arrow represents material conditionality. A statement of the form p → q is true except when p is true and q is false.

**assumption** In an argument an assumption is an unstated premise.
**authority** An authority is a person or reference work whose credentials—based on training or experience—are sufficient with respect to a particular issue that his or her word can be accepted as (very probably) true. Examples: Former University of Iowa head football coach Hayden Fry is an authority on collegiate football. Albert Einstein was an authority on nuclear physics.

**average** See mean, mode, median, and midrange.

**bandwagon** The bandwagon fallacy is a special case of mob appeal that takes the form “Everyone is doing it, so you should do it too.”

**basis of an analogy** The basis of an analogy consists of those properties known to be common to the ground and the objective extension of the analogy. For example, if you have three objects, A, B, and C, all of which are known to share properties a, b, and c, and the question is whether there is an additional common property, a, b, and c are the basis of the analogy.

**begging the question** The informal fallacy of begging the question occurs when you assume as a premise the conclusion to be established by an argument. Generally, the premise and the conclusion are not stated in the same words, but the meaning of both is the same: “We know that Chris is a bachelor, since he is an unmarried man” begging the question, since the words ‘bachelor’ and ‘unmarried man’ are synonymous. A second version of the fallacy occurs in a chain of arguments in which the conclusion of the last is a premise of the first. “We know that everything the Bible says is true, since it is the inspired word of God. And we know that the Bible is the inspired word of God, since the Bible says it is the inspired word of God and everything the Bible says is true” argues in a circle. A third version is a question-begging epithet. It involves a descriptive term that ascribes a property to a thing in a premise that you are trying to establish in a conclusion. In the statement, “That crook John Cribbs should be found guilty of grand larceny,” the word ‘crook’ is an epithet that begs the question of Cribbs’s guilt.

**belief, to believe** A belief is a proposition one accepts as true. One might or might not have evidence to support one’s belief that the proposition is true. Examples: Clara believes that it will rain tomorrow. Fodsworth believes that God exists.

**bias, biased** A survey is said to be biased when there are unequal chances that any given member of a population be selected for the survey. A person is said to be biased when he or she is more favorably inclined to one kind of thing than another, often without having reasons for such a favoritism. A person’s bias is often shown by the descriptive words he or she uses.

**biconditional statement** A biconditional is a statement of the form \( p \) if and only if \( q \).

**Boolean interpretation of categorical propositions** According to the Boolean interpretation of categorical propositions, particular propositions have existential import, but universal propositions do not have existential import.

**burden of proof** The burden of proof is the responsibility of showing that a claim is true. If Ashley makes a claim or presents an argument, she assumes the burden of proof. Once the argument is presented, the burden of proof shifts to any would-be critic. If someone shows that there are reasons to question Ashley’s argument, the burden of proof shifts back to Ashley.

**categorical statement, categorical proposition** A categorical statement is a statement expressing the relationship between two classes of objects.
categorical syllogism  A categorical syllogism is a deductive argument composed of two premises and a conclusion, each of which is a categorical proposition, and which has, or can be reduced to, three categorical propositions having exactly three distinct terms.

cause  A cause is that without which a certain phenomenon would not occur, or that which, when given, a certain phenomenon will occur, or both. The term ‘cause’ is ambiguous.

charity, principle of  The principle of charity is the principle that whenever you are trying to state a person’s argument, you always state it in as strong a form as you can justify. For example, treat the argument as a deductive argument with a missing premise if the premise you propose is true and will yield a valid deductive argument. If you cannot find a premise that is both true and will yield a valid deductive argument, treat the argument as an inductive argument.

circular argument  See begging the question

civility  Civility is a critical-thinking virtue. To be civil is to treat the works of others with tolerance and respect.

clarity  Clarity is a critical-thinking virtue. It is a commitment to avoiding confusion and ambiguity.

cognitive meaning of a term  The cognitive meaning of a term is either the objective, conventional, or subjective connotation of a term. It consists of those properties in virtue of which a term can be correctly applied to a thing.

coherent, coherence  A set of propositions is coherent if it “makes sense,” that is, if it consistent and shows that there is some determinate relationship(s) among the objects discussed. For example, a theoretical framework will often make a certain set of data coherent by showing the relationships among the data.

complement, complementary class, complementary term  The complement of any class is the class containing all those things not in a given class. The complement of the class of all red things contains all things that are not red. The complement to the term “red things” is “nonred things.”

complex question  A complex question asks two or more questions at once. In answering the explicit question, you also answer the assumed questions. The fallacy of complex question occurs when a conclusion is drawn on the basis of an answer to the complex question. Example: “When did you start cheating in the course?” “On January 28.” “Aha! So you admit you have been cheating in this course!”

composition  Composition is an informal fallacy in which a claim that is true of a member of a class or of a part of a whole is applied to the class or the whole. Example: The steering wheel of my car weighs fewer than ten pounds, so my car weighs fewer than ten pounds. You should be careful in claiming that an argument commits the fallacy of composition, since there are cases in which a property of a part is also a property of the corresponding whole. For example, if a disjunct is true, the disjunction of which it is a part is also true.

compound statement  A compound statement is any statement that has another statement as a component. Examples: “Today is Tuesday, and it is raining.” “John believes that Elise likes pizza.” See also truth-functionally compound statements and nontruth-functionally compound statements

concept  A concept is the meaning of a word.

conceptual framework  A conceptual framework is a set of assumptions operative in presenting an argument or explanation. Example: The conceptual framework operative in sci-
entific explanations is naturalistic; that is, it assumes that all natural phenomena can be explained on the basis of other natural phenomena, including natural laws.

**conclusion** The conclusion of an argument is the statement the argument is taken to establish as true or probably true.

**conclusion indicator** A conclusion indicator is a word such as ‘thus’ or ‘therefore’, which is commonly found before a statement that is the conclusion of an argument.

**conditional statement** A conditional statement is statement of the form, “If . . ., then . . . .” It is also known as a hypothetical statement.

**confidence level** In a survey the confidence level is the degree of accuracy which experience indicates can be assumed on the basis of a sample of a certain size for a population of a certain size.

**confirm, confirmation** Evidence that tends to confirm a hypothesis tends to show that the hypothesis is true.

**conflict of interest** A person has a conflict of interest if he or she has, or appears to have, mixed motives in making a claim. Example: In any commercial featuring a famous personality, the person is giving a paid endorsement. Because the person stands to gain financially from the endorsement, you might question whether the person is making the endorsement only because he or she is paid to do so.

**conject** A conject is one of the statements in a conjunction.

**conjunction** A conjunction is a statement in which the main connective is the word ‘and’ or ‘but’. Example: “Today is Tuesday, and today it is sunny.”

**connectives** In propositional logic there are one-place and two-place connectives. The tilde (~) is a one-place connective. The ampersand (&), wedge (v), arrow (→), and double arrow (↔) are two-place connectives.

**connotation** The connotation or intension of a term consists of those properties a thing of a kind has in virtue of which it is a thing of that kind. The *objective connotation* consists of all those properties a thing actually has in virtue of which it is a thing of a certain kind. The *conventional connotation* consists of those properties the speakers of a language deem sufficient to classify a thing as a thing of a certain kind. Dictionary definitions usually state the conventional connotation of a term. The *subjective connotation* consists of those properties a particular speaker of a language deems sufficient to classify a thing as a thing of a certain kind.

**consequent** In a conditional statement of the form “If p, then q,” the consequent is the *then* clause.

**consequentialism, consequentialist** Consequentialism is a moral theory holding that one’s moral obligation to engage in or refrain from engaging in an action is based solely upon the consequences (results) of that action. Consequentialist moral theories are sometimes known as teleological moral theories.

**consilience** Consilience is the tendency of several forms of inductive evidence to point to the same conclusion.

**consistent** Consistency is a critical-thinking virtue. Two propositions are consistent if it is possible for both to be true at the same time, that is, if their conjunction does not yield a contradiction. For example, the propositions “Today is Tuesday” and “Today it is raining” are consistent. The two propositions “It is raining” and “It is not raining” are inconsistent. See also external consistency and internal consistency
context A context is either (1) a domain of discourse, that is, a set of assumptions operative in an argument (see domain of discourse), or (2) the more general discussion from which a sentence or argument is taken. In the second sense, when a passage is “taken out of context,” its meaning can change. If the meaning shifts by taking a passage out of context, you commit the informal fallacy of accent. Example: Assume Fred was raising an objection to his own argument. If you quote the objection without acknowledging that it was an objection, you have taken the passage out of context.

contingent truth A contingent truth is a statement whose truth or falsehood depends on facts in the world. It is not a necessary truth.

contradiction, contradictory Two propositions are contradictory if and only if it is logically impossible for both to be true and it is logically impossible for both to be false. For example, the statements “It is raining” and “It is not raining” are contradictory statements. It is logically impossible that both statements be true under the same conditions, and it is logically impossible for both to be false under the same conditions.

contrapositive, contraposition The contrapositive of a categorical proposition is formed by switching the subject and predicate terms and replacing each with its complement. Example: The contrapositive of “All professors are intelligent beings” is “All non-intelligent beings are nonprofessors.” Only the contrapositive of a universal affirmative proposition and a particular negative proposition are logically equivalent to the original proposition.

contrary, contraries Two statements are contraries if they cannot both be true at the same time and in the same place. It is possible for contrary statements both to be false. Example: The following two statements are contraries which might both be false: “All critical-thinking textbooks are interesting pieces of literature,” and “No critical-thinking textbooks are interesting pieces of literature.”

converse, conversion You form the converse of a categorical proposition by switching the places of the subject and the predicate term. Example: The converse of “No cats are dogs” is “No dogs are cats.” Only the converse of universal negative propositions and particular affirmative propositions are logically equivalent to the original propositions.

counterexample (1) A counterexample to a given deductive argument is an argument of the same form in which all the premises are true and the conclusion is false. Sometimes known as a deductive counterexample, this is sufficient to show that the form of the given argument is invalid. (2) A counterexample to an inductive generalization or a definition is a single instance that shows that the generalization is false. For example, if you found a gray crow, it would be a counterexample to the general claim that all crows are black. It would be sufficient to show that the statement “All crows are black” is false.

criterion, criteria A criterion is a standard for judgment. Example: The criteria for judging the value of a diamond include weight, cut, and color.

critical thinking Critical thinking is careful reasoning. It is a careful, deliberate, efficient, and effective means for determining whether a statement or claim is, or is probably, true or false.

cultural relativity of morals The cultural relativity of morals refers to the fact that different cultures accept different codes of morals.

curiosity Curiosity is a critical-thinking virtue. It is the desire to learn.

deduction, deductive argument A valid deductive argument with true premises, a sound argument, provides conclusive evidence for the truth of its conclusion. Please note
that this is not equivalent to the popular definition of 'deduction' in terms of going from particular premises to a general conclusion: There are arguments that virtually anyone would deem valid deductive arguments which are inconsistent with the popular definition. Note also that this is not equivalent to the uses of 'deduction' and 'deduce' in many mysteries: Sherlock Holmes's description of his elaborate deduction at the end of *A Study in Scarlet* is primarily an inductive argument, although there are deductive arguments that play a role in his elaborate argument.

**deductive counterexample** You construct a deductive counterexample to an argument of a given form by constructing another argument of the same form in which all the premises are true and the conclusion is false. A deductive counterexample shows that any argument of that form is invalid.

**denial** A denial is a compound statement containing the word 'not' or one of its synonyms. This is also known as a negative statement.

**denotation** The denotation or extension of a term consists of those objects to which a term is correctly applied.

**denying the antecedent** Denying the antecedent is a fallacious argument form. Where \( p \) and \( q \) are variables that can be replaced by any statement, an argument commits the fallacy of denying the antecedent if it has the following form: If \( p \), then \( q \). Not \( p \). Therefore, not \( q \).

**denying the consequent** Denying the consequent (modus tollens) is a valid argument form. Where \( p \) and \( q \) are variables that can be replaced by any statement, denying the consequent is an argument of the following form: If \( p \), then \( q \). Not \( q \). Therefore, not \( p \).

**deontological moral theory** See nonconsequentialist moral theory

**dependence** In calculating the probability of events, two events are dependent if calculating the probability of the first event affects the probability of the second event.

**depth** Depth is a critical-thinking virtue. To understand something in depth is to understand most of its aspects or implications.

**detachment** Detachment is a critical-thinking virtue. It is the ability to set aside your own interests and emotional attachments in seeking truth.

**disjunct** A disjunct is one of the statements in a disjunction.

**disjunction** A disjunction is a statement in which the main connective is a word such as 'or' or 'unless'. Example: "Either Sally likes chocolate or she likes caramels."

**distribution** A term is distributed in a categorical proposition if it refers to all members of a class. The subject term of all universal propositions is distributed. The predicate of all negative propositions is distributed.

**divine command theory** The divine command theory of morals holds that the source of moral obligation is the commands of God.

**division** Division is an informal fallacy in which a claim that is true of a class or a whole is applied to a member of a class or a part of the whole. Example: My car weighs over 2,000 pounds, so the steering wheel of my car weighs over 2,000 pounds. Please note that there are cases in which properties of the whole or class are also properties of the parts or the individuals in the class. For example, if a conjunction is true, then each of its conjuncts is true.

**domain of discourse** A domain of discourse is a set of assumptions operative in a discussion or argument. For example, when discussing the Sherlock Holmes stories, Sir Arthur Conan Doyle’s stories specify a domain of discourse, that is, the subject matter of the discussion.
Double arrow (↔) A double arrow represents material biconditionality. A statement of the form \( p \leftrightarrow q \) is true if and only if \( p \) and \( q \) have the same truth value.

economy Economy is a critical-thinking virtue. It is demonstrated in reducing verbiage by being precise and recognizing that simpler explanations (those with fewer theoretical assumptions) are probably true.

end An end or objective or purpose is that which one seeks in engaging in an action. Example: Joan's end in crossing the street was to purchase cigars in the tobacco shop.

enthymeme, enthymematic argument An enthymeme is a deductive argument with a missing premise or an unstated conclusion.

ethical egoism Ethical egoism is a consequentialist moral theory holding that you always ought to act in such a way that it maximizes your own interests.

equivocate, equivocation You equivocate if you use the same word with two different meanings in the course of an argument. All arguments that equivocate on the meaning of one or more terms and the acceptance of the conclusion depends upon the equivocation are invalid.

essay An essay is a piece of writing in which the author provides evidence that a statement—the thesis—is true. An essay is often a fairly long discourse, and in addition to the main thesis, there are subordinate theses that support the main thesis, which in turn are supported by argumentative evidence.

ethical egoism Ethical egoism is a theory of moral obligation based on the principle “Act in such a way that the action maximizes your self-interest.”

evaluative description An evaluative description maintains something is good or bad (or evil) or that an action is one you are obligated to perform or refrain from performing. Evaluative descriptions are made in terms of moral or aesthetic qualities as well as in terms of nonmoral and nonaesthetic qualities.

evidence Evidence consists of reasons to believe that a proposition is true. Example: General Schwarzkopf’s testimony before the Senate committee provided evidence that a significant amount of care was taken to protect the soldiers during Operation Desert Storm.

existential import A statement has existential import if and only if its truth assumes that there is at least one object of which the proposition is true. On the Boolean interpretation of categorical logic, only particular propositions have existential import. On the Aristotelian interpretation of categorical logic, both universal and particular propositions have existential import.

experimental question An experimental question is one whose answer depends upon experience.

expert choice sampling Expert choice sampling is a form of purposive sampling that assumes that experts in a certain area have some special understanding of what is typical.

explanandum In an explanation, the explanandum is a sentence describing an event or phenomenon that is known or believed to have occurred.

explanans In an explanation, the explanans consists of one or more sentences that answer the question, Why did the event or phenomenon described by the explanandum occur?

explanation An explanation is a complex discourse composed of two or more statements in which one statement describes an event or phenomenon which is known or believed to have occurred (the explanandum), and the remaining statement or statements (the explanans) answer the question why the event or phenomenon described in the explanandum is as it is.
explanatory scope  The explanatory scope of a hypothesis consists of that class of phenomena a hypothesis will explain.

extension  See denotation

external consistency  In the sciences, external consistency is the consistency between claims made by a hypothesis for which there appears to be evidence and the ongoing theoretical assumptions of a science.

factual disagreement  A factual disagreement is a disagreement about how things are in the world. For example, Jen and Jeff disagree about the number of people who live in the apartment upstairs.

fallacy, fallacious  A fallacy is a defective argument. A deductive argument is fallacious or commits a formal fallacy if it is invalid, that is, if it is possible for all the premises of the argument to be true and the conclusion false. Informal or material fallacies arise when the content of an argument (the material) fails to support the truth of the conclusion.

fallacy, formal  See fallacy.

fallacy, informal or material  See informal fallacy

false, falsehood  A statement or proposition is false if and only if it does not correspond to the way the world is.

false cause  The informal fallacy of false cause occurs if you claim that something is a cause when it is not. Sometimes there is a cause, but it is not the cause cited (this is sometimes known as non causa pro causa, “not the cause for the cause”). Example: “It rained because John washed and waxed his car.” Sometimes one assumes that one event is the cause of another simply because the first occurred first (this is sometimes known as post hoc ergo propter hoc, “before, therefore because”). Example: “The Boy Scouts went camping on Friday night, so it rained early Saturday morning.”

false dichotomy  An argument commits the fallacy of false dichotomy if it presents a disjunction as exhaustive when it is not. Example: Dana is either a Republican or a Democrat. She is not a Democrat. So, she is a Republican. Were it the case that Dana is a member of the Green Peace Party, the disjunctive premise would have been false.

falsify, falsification  Evidence falsifies a hypothesis when it shows that the hypothesis is not true. Example: If your hypothesis is that “If A occurs, then B occurs,” and you find a case in which A occurs but B does not occur, then that instance falsifies the hypothesis.

form  The form of an argument is the structure or pattern found in an argument. More than one argument can have the same form. For example, the following two arguments have the same form (affirming the antecedent): (1) If today is Tuesday, then tomorrow is Wednesday. Today is Tuesday. Therefore, tomorrow is Wednesday. Therefore, tomorrow is Wednesday. (2) If interest rates are dropping, then the Dow Jones Industrial average is rising. Interest rates are dropping. Therefore, the Dow Jones Industrial average is rising. Validity is a formal property of an argument. It is a property of its form, not its content.

genetic fallacy  The genetic fallacy is a special case of arguing from a stereotype based on the origins of a person or thing. Example: “Our professor isn’t very bright, since he was raised in a small town” assumes the false premise that “All (or most) people raised in a small town are not very bright.”

Gettier paradox  The Gettier paradox, named for Edmund L. Gettier, who originally raised the puzzle, arises when one has a belief, there is evidence that supports the belief, and the belief is true, but the evidence you cite does not show that the belief is true. Example: You believe that Smith now owns a brown 1955 Ford. Your evidence for that is (1) last Friday
Smith told you she owns a brown 1955 Ford, (2) you saw her driving a brown 1955 Ford when she left work that day, and (3) Friday night you had a friend in the police department check the license number of the brown 1955 Ford Smith was driving to see to whom it was registered: It was registered to Smith. You have very good evidence that, as of 5:30 Friday, Smith owned a brown 1955 Ford. But there was a tragic accident on Saturday morning, and her classic car was totaled. She sold her car to a salvage yard, but had the great good fortune to find and purchase another brown 1955 Ford on Saturday afternoon. So, your belief that she now owns a brown 1955 Ford is true, but your evidence is irrelevant: Under the circumstances, none of the evidence supports the belief that Smith now owns a brown 1955 Ford.

**ground for an analogy** The ground for an analogy are those objects having *all* the properties under consideration. For example, if you have three objects, A, B, and C, both A and B have properties a, b, c, and d, and the question is whether C also has property d, A and B are the ground for the analogy.

**grouping indicators** In propositional logic the grouping indicators are parentheses, square brackets ([ ]), and braces ({}). They show which two statements are grouped together by a sentential connective.

**guide columns** In a truth table the guide columns show all possible combinations of the truth values of the same statement in an argument.

**guidepost** In an essay a guidepost is a paragraph that tells your reader where you have been and where you are going. It summarizes the arguments you have given to that point and indicates which subordinate thesis you will examine next.

**haphazard survey** A haphazard survey is a purposive survey limited to subjects that fortuitously present themselves.

**hasty generalization** The informal fallacy of hasty generalization occurs when you reach a general conclusion, whether universal or statistical, on the basis of insufficient evidence, especially when the sample from which the conclusion is drawn is atypical. Example: Fred is a redhead and he has a bad temper, so all redheads have a bad temper.

**hearsay evidence** Hearsay evidence is second-hand evidence (rumor), often based on nothing more than the testimony of an individual. All things being equal—assuming that other types of evidence are available—it is weak evidence. Example: Sam said that Lynn said that she would not be going to the party on Saturday.

**humor** Humor is a critical-thinking virtue. A critical thinker is willing not to take himself or herself seriously.

**hypothesis** A hypothesis is a proposed answer to a question or solution to a problem. It is typically the starting point of an investigation—a search for evidence—that will tend to confirm or falsify the hypothesis.

**hypothetical statement** See conditional statement

**ignorance, appeal to** The informal fallacy of appeal to ignorance is committed when you say that since there is no evidence that a certain proposition is true, it must be false, or when you say that since there is no evidence that a certain proposition is false, it must be true. Examples: (1) Since there is no evidence that extraterrestrial intelligent life does not exist, extraterrestrial intelligent life exists. (2) Since there is no evidence that extraterrestrial intelligent life exists, it does not exist. **Warning:** There are cases in which the lack of evidence that a proposition is true provides good reason to believe that the proposition
is false. Example: There is no reason to believe that my neighbor is the Atlanta Ax Murderer, so she is not the Atlanta Ax Murderer.

**ignoratio elenchi** See irrelevant conclusion

**independence** In calculating the probability of two or more events, the events are independent if and only if the probability of the first event does not affect the probability of the second and subsequent events.

**indifference, principle of** In classical probability theory, the principle of indifference is the assumption that all possibilities are equally probable.

**inductive argument** An inductive argument with true premises provides some, but not conclusive, evidence for the truth of its conclusion. There are several types of inductive arguments. In some you argue from particular instances to a general proposition. In analogies, your argument is based on a comparison of two or a small number of objects. Here you argue that since objects A and B share a certain number of properties (a, b, c, d, and e), and since A has an additional property f, it is likely that B also has the property f.

**industriousness** Industriousness is a critical-thinking virtue. It is the tendency to work diligently to obtain a goal.

**inference** An inference is a psychological state in which you draw a conclusion on the basis of a certain body of information. Sometimes the word ‘inference’ is used to represent an argument or an argument form. See reasoning

**informal fallacies** Informal fallacies are mistakes in reasoning that arise from the content of the argument, that is, the materials from which the argument is constructed. They are also known as material fallacies. Informal fallacies occur when the premises of an argument are irrelevant to the argument’s conclusion, or the premises are ambiguous and the move from the premises to the conclusion exploits that ambiguity, or the premises rest on unwarranted assumptions, or the premises provide only weak inductive evidence for the truth of the conclusion.

**intension** See connotation

**internal consistency** A theory, or any other kind of discourse, is internally consistent if there are not two or more propositions in the theory that can be combined to form a contradiction.

**invalid, invalidity** Invalidity is a formal characteristic of an argument. An argument is an invalid deductive argument if and only if it is possible for all its premises to be true and its conclusion false.

**irrelevant conclusion** You commit the fallacy of irrelevant conclusion if you draw a conclusion from an argument that is not suggested by the premises.

**knowledge, to know** Knowledge is often defined as justified true belief. So understood, a true belief can be deemed knowledge only if there is good evidence that the belief is true. Example: You believe that Smith owns a brown 1955 Ford, and your evidence for that is (1) Smith told you she owns a brown 1955 Ford, (2) you have seen her driving a brown 1955 Ford, and (3) you had a friend in the police department check the license number of the brown 1955 Ford Smith was driving to see to whom was registered. It was registered to Smith. You have good evidence that your belief is true; you seem justified in claiming to know that Brown owns a brown 1955 Ford. See also Gettier Paradox

**logically equivalent propositions** Two propositions are logically equivalent if and only if they are true under exactly the same conditions.
**loose derivation** A loose derivation is an inductive argument that differs from a valid deductive argument only insofar as a universal premise is replaced with a less than universal premise.

**major premise** In a categorical syllogism, the major premise is the premise that contains the major term.

**major term** In a categorical syllogism, the major term is the predicate term of the conclusion.

**margin of error** In a survey, the margin of error is the percentage by which past experience suggests actual behavior might deviate from the results of a survey within a certain confidence level.

**material biconditionality** See biconditional and double arrow

**material conditionality** See conditional and arrow

**mean** The mean is the arithmetic average calculated by dividing the sum of the individual values by the total number of values in a reference class.

**means** The means are the actions undertaken to reach a certain end or objective. Example: Jan attended college as a means to obtaining a job as an accountant. Often a means-end statement is given in the form of a conditional. For example, in the statement “If you want to pass this course, then you should study hard every day,” the antecedent specifies an end to which the consequent is the means.

**median** The median is a meaning of ‘average’. It is the number that occurs in the middle when the numbers are placed in ascending order.

**metaphor** A metaphor is an analogy in which an implicit comparison is made between two things. The statement “Language is a picture of the world” is a metaphorical statement.

**metaphorical usage** A word is used metaphorically when it is used outside of its normal domain but there is an implicit assumption that the meaning is somehow similar to the standard meaning.

**middle term** In a categorical syllogism, the middle term is the term found in the premises but not in the conclusion.

**midrange** The midrange is a meaning of ‘average’. The midrange is the point in the arithmetic middle of the range. It is calculated by adding the highest number in the range to the lowest number and dividing by two.

**minor premise** In a categorical syllogism, the minor premise is the premise containing the minor term.

**minor term** In a categorical syllogism, the minor term is the subject term of the conclusion.

**mob appeal** The fallacy of mob appeal assumes that some kind of popular appeal is a sufficient reason to engage in an action or hold a belief.

**mode** The mode is an average consisting of the number that occurs most frequently in a reference class.

**modus ponens** See affirming the antecedent

**modus tollens** See denying the consequence

**moral relativity** Moral relativity is the thesis that there are no universal moral rules, that actual moral rules vary from culture to culture.

**moral rule** A moral rule is a statement of moral obligation.

**natural law** A natural law is a general statement describing the way the world is. Examples: “All pure water heated to 212°F at standard atmospheric pressure boils.” “For every action there is an equal and opposite reaction.” Natural laws, to the extent they are known, are
known on the basis of inductive evidence. Hence, what we take to be a natural law at any
given point in time is subject to revision as our knowledge of the world increases.

**naturalistic explanation** A naturalistic explanation is an explanation based upon facts
about nature. It assumes that if certain natural events occur, then they will be followed by
other natural events or other natural events will occur at the same time. All scientific
explanations are naturalistic.

**necessary and sufficient condition** A necessary and sufficient condition for some
event $E$ is a condition which, if present, will guarantee that $E$ will occur, and which, if
absent, will guarantee that $E$ will not occur.

**necessary condition** A necessary condition for some event $E$ is a condition which, if
absent, will guarantee that the event $E$ will not occur. Example: The presence of oxygen,
combustible materials, and heat are necessary conditions for fire.

**necessary truth** A necessary truth is a statement whose falsehood is impossible. Necessary
truths are of several kinds, including logically necessary, conceptually necessary, and epistemically necessary. The proposition “All bachelors are unmarried male adult human
beings” is a conceptually necessary truth.

**negative statement** A negative statement is a compound statement containing the word
‘not’ or one of its synonyms. This is also known as a denial.

**non causa pro causa** See false cause

**non sequitur** See irrelevant conclusion.

**nonconsequentialist moral theory** A nonconsequentialist moral theory maintains that
either the consequences of an action are irrelevant to the evaluation of a moral claim (rule-
deontology) or that they are not the only considerations that are relevant to the evalua-
tion of a moral claim (act-deontology).

**nontruth-functionally compound statement** A compound statement is a nontruth-
functionally compound statement if and only if the truth value of the statement does
not depend solely upon the truth values of the component statements. Example:
“John believes that Elise likes pizza.” The statement might be true even if Elise hates
pizza.

**normal probability distribution** The normal probability distribution is obtained when
the mean, mode, median, and midrange averages approximate one another. It is graphed as
a bell curve.

**objective** An objective or end is that which a human being might seek by engaging in an
action. Example: Joan’s objective in playing college football was to land a job with the
National Football League after graduation.

**objective extension of an analogy** The objective extension of an analogy is the object
compared to the ground of the analogy and which is known to have a number of proper-
ties in common with the objects in the ground. For example, if you have three objects,
A, B, and C, both A and B have properties $a$, $b$, $c$, and $d$, and the question is whether C also
has property $d$, then the objective extension of the analogy.

**obscure, obscurity** See vague

**obverse, obversion** The obverse of a categorical proposition is formed by changing the
quality of a proposition from affirmative to negative and replacing the predicate term with
its complement. Example: The obverse of “Some dogs are collies” is “Some dogs are not
non-collies.” Every categorical proposition is logically equivalent to its obverse.

**Ockham’s razor** See parsimony, principle of
open question An open question is a question that is not answered.

open-mindedness The virtue of open-mindedness is a willingness to consider new ideas or hypotheses.

opinion The word ‘opinion’ has at least three meanings: (1) a belief, (2) a belief that has not been supported by an argument, and (3) a belief that cannot by its nature be supported by an argument. The locution “It’s only an opinion” seems to take ‘opinion’ in the third way. What is then needed is an argument to show that there is no way to show that the belief is true or false. Once that is attempted, you usually will find that there are ways to clarify the meaning so that you can at least provide some justification for your belief.

oxymoron An oxymoron is a figure of speech by which a locution produces the effect of seeming self-contradiction. Example: cruel kindness.

paradigm, paradigmatic A paradigm is a perfect example. Joan took collies to be her paradigm of doghood.

parsimony, principle of If either of two hypotheses will explain a phenomenon and one involves fewer theoretical assumptions, that hypothesis is more probably true. Also known as Ockham’s razor.

particular affirmative proposition A particular affirmative proposition asserts that some members of the subject class are members of the predicate class. Example: Some professors are redheads.

particular negative proposition A particular negative proposition asserts that some members of the subject class are not members of the predicate class. Example: Some professors are not redheads.

particular proposition A particular proposition asserts that some members of a class are (or are not) members of another class.

performative utterances A performative utterance is a sentence used to bring some state of affairs into being. Examples: You make a promise by saying, “I promise that . . . ” A minister makes two people husband and wife by saying, in the correct ceremonial context, the words, “I now pronounce you husband and wife.” A person becomes President of the United States by repeating the oath of office in the context of an inauguration ceremony.

personal attack The fallacy of personal attack occurs when replying to an argument. The person or the person’s character is attacked rather than the argument.

persuasion, persuasive Persuasion is the art of convincing someone to accept a conclusion. Persuasive arguments are not always strong arguments: They can be invalid, or weak, or based on a false premise. Some persuasive arguments appeal to emotions rather than to facts.

phenomenon A phenomenon is an event or a state of affairs. In an explanation, that which is to be explained (the explanandum) often is called a phenomenon.

plausibility See reasonableness

poisoning the well See personal attack

population A population is the group of people or animals or things about which a person constructing a survey wishes to attain some information.

post hoc ergo propter hoc See false cause

precision Precision is a critical-thinking virtue. Precision concerns the degree of accuracy. For example, it is accurate to claim that Columbus discovered America in 1492. It is more precise to say he discovered America on October 12, 1492.
**predicate term** In a proposition, the predicate term is that which is said about the subject. Example, in the proposition “All professors are insane persons;” the term ‘insane persons’ is the predicate term.

**prediction** A prediction is a claim that some phenomenon will occur in a specified set of circumstances.

**premise** A premise is a statement in an argument that is taken as providing evidence for the truth of the argument’s conclusion.

**premise indicator** A premise indicator is a word such as ‘since’ or ‘because’, which is commonly found before a statement that is the premise of an argument.

**presumption** A presumption is something that is assumed but not stated (see assumption). Fallacies of presumption are based on the unstated assumption that all the relevant information is given.

**primary literature** If you are writing an interpretive essay on *Hamlet*, the primary literature is the play itself and anything else written by Shakespeare—for example, his letters. If you are writing an essay on the causes of the War of 1812, the primary literature consists of documents written during the War of 1812 by participants in that war. In general, primary literature consists of works written by contemporaries of an event about the event or the piece of literature under examination and other writings by the same author. See also secondary literature

**principle of parsimony** See parsimony, principle of

**principle of the uniformity of nature** See uniformity of nature, principle of

**probability sampling** See random survey

**probability theories** There are three probability theories. (1) Classical probability theory assumes that all probabilities are taken into account and all possibilities are equally probable. (2) Relative frequency probability theory is based on empirical data for determining frequencies. This is common in the sciences. (3) Subjective probability theory is based on individual beliefs. This is common at the race track.

**problematic extension of an analogy** The problematic extension of an analogy is that property common to objects in the ground but not known to be a property of the objective extension. For example, if you have three objects, A, B, and C, both A and B have properties a, b, c, and d, and the question is whether C also has property d, the question whether C also has property d is the problematic extension of the analogy.

**proposition** A proposition is what is meant by a declarative sentence. Technically, only propositions are true or false. Example: The proposition expressed by the statement “Today is Friday” is true if and only if today is Friday. The same proposition can be expressed by declarative sentences in several languages. The proposition expressed by the English sentence “It is raining” is the same proposition expressed by the French sentence “Il pleut” and the German statement “Es regnet.”

**purpose** A purpose or end or objective is the result a person has in mind when engaging in an action. Example: John’s purpose in taking GPHL120 was to fulfill a graduation requirement. Sometimes we talk about the purposes of nonhuman objects, for example, “The purpose of a hammer is to drive nails.” When we attribute purposes to inanimate objects, we are implicitly concerned with either the purpose of the inventor in making the object or the purpose of the user in using the object.

**purposive sampling** A survey based on purposive sampling is nonrandom (biased).
quality  The quality of a categorical proposition is affirmative (positive) or negative.

quantity, quantifier  Quantity is concerned with how many. In a categorical syllogism, the quantifiers ‘all’, ‘no’, and ‘some’ tell you with how many objects of a certain kind you are concerned.

question-begging epithet  See begging the question

quota sampling  Quota sampling is a form of purposive sampling that divides a population into relevant groups and samples the population in proportion to its prevalence in a population.

random survey, randomness  A survey is random when every member of a given population has an equal chance of being chosen for inclusion in the survey.

reasonableness  It is reasonable to accept the conclusion of an argument (or the conclusion you reach by the process of inference) if the information presented—as well as any other evidence that might be available—tends to show that the conclusion is true. Inductive arguments or inferences are deemed reasonable or plausible. Deductive arguments are deemed valid or sound.

reasoning  Reasoning is a psychological process by which a person reaches a conclusion on the basis of a body of information taken as evidence. Reasoning is often expressed in the form of an argument. See argument

recognition  Recognition is an act of perceiving something as a thing of a certain kind or as an individual previously perceived. Examples: He recognized that the object in the abstract painting was a cow. She recognized the sixth man in the police lineup as the man who committed the robbery.

reconstructing an argument  You reconstruct an argument when you attempt to restate it in such a way that the implicit reasoning process is made explicit. Example: You are given “Students going to college have to start budgeting their money, so everyone in this critical-thinking class needs to budget his or her money, for everyone in this critical-thinking class is a college student.” You might reconstruct it as follows:

All college students are people who have to start budgeting their money.

All students in this critical-thinking class are college students. Therefore, all students in this critical-thinking class are students who have to start budgeting their money.

But your reconstruction might be in error. Is the first premise true? You might need to reexamine your reconstruction to see whether all of your premises are true.

red herring fallacy  You commit the red herring fallacy if you reply to another person’s argument by confusing the issues, that is, if you distract someone from the content of another person’s argument.

rehearse an argument  To rehearse an argument is to state or summarize an argument, typically an argument set forth by someone else.

relevance  Relevance is a critical-thinking virtue. Evidence is relevant to a conclusion if and only if it tends to show that the conclusion is true.

retrodiction  A retrodiction is a claim that some phenomenon has occurred in a specified set of circumstances.

rhetoric, rhetorical  Rhetoric is the art or science of communication in words. The rhetorician often is at least as concerned with persuasion as with argumentative strength.
rhetorical question A rhetorical question is a question that assumes an answer. It is a statement in the form of a question. Example: Who can doubt that critical thinking is the most important skill you learn in college? Implicit statement: Critical thinking is the most important skill you learn in college.
sample In constructing a survey or attempting to reach a generalization, the sample is the group of objects examined.
scope See explanatory scope
secondary literature If you are writing an essay on Romeo and Juliet, the secondary literature consists of books and articles written about the play Romeo and Juliet. If you are writing an essay on the causes of the Thirty Years War, the secondary literature consists of any other books or essays written on the causes of the Thirty Years War. In general, secondary literature consists of essays written on the same topic you are discussing. See also primary literature
sexist language Sexist language is language that does not treat both sexes equally. For example, if you are choosing a pronoun that applies to both women and men, use the construction “he or she,” rather than “he.” Use the expression “husband and wife” rather than “man and wife.”
simile A simile is an analogy in which the word ‘like’ or ‘as’ makes the comparison between two or more things explicit.
simple random sample with replacement In a simple random sample with replacement any individual that is drawn from the population is sampled (interviewed, examined) and then returned to the population from which the sample is drawn. In a simple random sample with replacement an individual can be sampled multiple times. This is commonly used for an indefinitely large population.
simple random sample without replacement In a simple random sample without replacement any individual that is drawn from the population is sampled (interviewed, examined) and not returned to the population from which the sample is drawn. In a simple random sample without replacement no individual can be sampled multiple times. This is commonly used for a finitely large population.
simple statement A simple statement is any statement that does not have another statement as a part.
singular proposition A singular proposition makes a claim about an individual person or thing.
skeptic, skeptical, skepticism A person is skeptical regarding the truth of a statement if he or she provides reasons to question the statement’s truth. Example: David Hume (1711–1776) was a skeptic with respect to our beliefs in causal reasoning, for he argued that there are no unquestionable grounds for establishing the truth of our belief that two kinds of things, for example, fire and heat, always stand in causal relations to each other.
slippery slope The slippery slope (wedge) fallacy is an informal fallacy in which there is a chain of causal claims—often in which things begin with bad consequences and grow progressively worse—in which one or more of the causal claims is false.
snowball samples In a snowball sample, you begin with members of the relevant group and ask for names of additional members.
sound argument A sound argument is a valid deductive argument with true premises.
squares of opposition A square of opposition is a chart showing the immediate inferences that can be drawn given the truth or falsehood of a categorical proposition. There are distinct squares for the Aristotelian and the Boolean interpretations.

**standard-form categorical proposition** A categorical proposition is said to be in standard form if it is composed of a standard quantifier (*all, no, or some*) followed by a subject term, followed by a form of the verb *to be*, followed by a predicate term. For example, the categorical proposition “All fire trucks are red things” is a standard-form categorical proposition. The categorical proposition “Every living tree grows” is not a standard-form categorical proposition.

**standard-form categorical syllogism** A categorical syllogism is said to be a standard-form categorical syllogism if each of its component propositions is a standard-form categorical proposition and it is arranged major premise first, followed by the minor premise, followed by the conclusion. It must contain exactly three terms used in the same sense throughout the syllogism.

**statement** A statement is a declarative sentence. Examples: “Today is Friday,” “Heute ist Freitag.”

**stereotype** A stereotype is a false, though commonly made, general claim about a certain group of people. Example: “You can understand why Dan has a hot temper, since he’s a redhead.” The stereotype, the general principle that is assumed in the previous argument, is “All redheads are hot tempered.” Arguments based on stereotypes are unsound.

**stratified random survey** In a stratified random survey, the population is divided into categories (strata), and each stratum is surveyed randomly.

**straw person fallacy** You commit the straw person fallacy if you misrepresented another person’s argument and criticize the argument you have misrepresented.

**structural samples** Structural samples are purposive surveys made regarding relationships in a structure. You need to construct such surveys regarding numerous kinds of groups to provide evidence that the relationship in question holds independently of the kind of group to which each structural sample is constructed.

**subaltern, subalternation** On the Aristotelian interpretation of categorical logic, subalternation is a relation between a universal and its corresponding particular such that if the universal is true, the corresponding particular is also true. For example, if you know that “All jazz musicians are cool cats” is true, you can infer that “Some jazz musicians are cool cats” is true.

**subcontrary** Two statements are subcontraries if it is possible for both to be true, but it is not possible for both to be false. On the Aristotelian interpretation of categorical logic, this is the relation between a particular affirmative and a particular negative with the same content.

**subject term** The subject term of a proposition is that about which something is claimed. Example: In the proposition, “All professors are insane persons,” the subject term is ‘professors’.

**sufficient condition** A sufficient condition for some event *E* is a condition in the presence of which event *E* is guaranteed to occur. Example: The presence of oxygen, combustible materials, and sufficient heat are jointly sufficient conditions for fire.

**suppressed evidence, fallacy of** The fallacy of suppressed evidence occurs when someone intentionally ignores evidence contrary to the position he or she is defending.
**Survey**
A survey is an investigation undertaken to discover the current distribution of something in the world. Public opinion surveys are used, for example, to discover the current approval rating of the President or to determine the group with whom a certain product is most popular.

**Syllogism**
A syllogism is a deductive argument having two premises and a conclusion.

**Synthetic Statement**
A synthetic statement is a statement in which the predicate provides information in addition to what is known in knowing the meaning of the subject term.

**Systematic Sampling**
Systematic sampling consists of choosing every so-manyeth object after a random choice of the first object.

**Tautology, Tautologous Statement**
A tautology is a statement that is true in virtue of its form. “Either it is raining or it is not raining” is an example of a tautologous statement.

**Teleology, Teleological**
Something is teleological if it is end-directed. On teleological moral theories, see *consequentialism*.

**Term**
A term is a word or phrase that can function as the subject of a sentence.

**Testimony**
Testimony is a claim made by a person.

**Theory**
An explanatory theory consists of a number of well-confirmed, interrelated hypotheses that explain phenomena of a certain kind.

**Thesis**
In an essay the thesis is the statement the author is attempting to establish as true. A thesis is to an essay what a conclusion is to an argument.

**Tilde (~)**
The tilde represents negation. A statement of the form ~p is true if and only if p is false, and ~p is false if and only if p is true.

**Transitional Narrative**
In an essay transitional narrative is a sentence or a number of sentences that move you from one argument to the next.

**True, Truth**
A statement or proposition is true if and only if it corresponds with the way the world is. Example: The statement “Winter officially begins on December 20, 21, or 22” is true.

**Truth Table**
A truth table is a chart representing all possible combinations of truth values of the premises and conclusion of a propositional argument. Truth tables allow you to determine whether there could be any case in which all the premises are true and the conclusion is false.

**Truth-Functionally Compound Statement**
A compound statement is a truth-functionally compound statement if and only if the truth value of the whole rests entirely upon the truth value of each of the statements of which it is composed. Example: “Today is Tuesday, and it is raining.” The statement is true if and only if it is true that today is Tuesday and it is true that it is raining.

**Truth Value**
The truth value of a statement is its truth or falsehood.

**Uniformity of Nature, Principle of**
The principle of the uniformity of nature is the assumption that, at some level, the future will resemble the past. This is reflected in the fact that any natural law, for example, Einstein’s theory, has always held and will always hold.

**Universal Affirmative Proposition**
A universal affirmative preposition asserts that all members of the subject class are members of the predicate class. Example: All collies are dogs.
universal negative proposition  A universal negative proposition asserts that no members of the subject class are members of the predicate class. Example: No cats are dogs.

universal proposition  A universal proposition asserts that either all members of one class are members of another or that no members of one class are members of another.

unpacking a metaphor  You unpack a metaphor when you spell out the ways in which the objects compared are similar and different from each other.

utilitarianism  Utilitarianism is a consequentialist moral theory based on the principle that one ought act in such a way that it yields the greatest good (or pleasure or happiness) to the greatest number of people.

vague  A word is vague if its meaning is unclear, if there are no clear criteria for the application of the word.

validity, invalidity  Validity is a formal characteristic of deductive arguments. An argument is valid if and only if it is impossible for all its premises to be true and its conclusion false. If an argument form is invalid, it provides no more than inductive evidence for the truth of its conclusion.

variable  A variable is letter used to represent a term or a proposition in an argument. It is a placeholder. We often represent the form of an argument by replacing common terms or propositions with variables. Notice how variables are used to represent the form of the following argument:

<table>
<thead>
<tr>
<th>Argument</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>If today is Tuesday, then tomorrow is Wednesday.</td>
<td>If ( p ), then ( q ).</td>
</tr>
<tr>
<td>Today is Tuesday.</td>
<td>( p ).</td>
</tr>
<tr>
<td>Therefore, tomorrow is Wednesday.</td>
<td>Therefore, ( q ).</td>
</tr>
</tbody>
</table>

verbal disputes  A verbal dispute is a disagreement between two or more people that rests on ambiguities in language rather than questions of fact. The disputants assign different meanings to a key word, and any apparent disagreement is resolved once the alternative meanings of the word are recognized.

weak analogy  Weak analogy is an informal fallacy based on an analogical argument in which the points of comparison are insufficient to support the conclusion or in which there are significant disanalogies among the things compared so the conclusion does not follow.

wedge (v)  The wedge represents disjunction. A statement of the form \( p \vee q \) is true except when both \( p \) and \( q \) are false.

wedge fallacy  See slippery slope