DEFINITIONAL DICTIONARY OF LOGIC

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A

Accident, Fallacy of: A fallacy committed when a general rule is applied to a specific case, but because of extenuating circumstances, the case is an exception to the general rule and the general rule should not be applied to the case.

Amphiboly, Fallacy of: A fallacy containing a statement that is ambiguous because of its grammatical construction. One interpretation makes the statement true, the other makes it false. If the ambiguous statement is interpreted one way, the premise is true but the conclusion is false; but if the ambiguous statement is interpreted the other way, the premise is false. The meaning must shift if the argument is going to go from a true premise to a true conclusion. If the meaning is not allowed to shift during the argument, either the argument has false a premise or it is invalid.

Appeal to Questionable Authority Fallacy (argumentum ad verecundiam):When someone attempts to support a claim by appealing to an authority that is untrustworthy, or when the authority is unqualified, or prejudiced, or has a motive to lie.

Argument: An argument is a connected series of statements or propositions, some of which are intended to provide support, justification or evidence for the truth of another statement or proposition. Arguments consist of one or more premises and a conclusion.

Argument Against the Person (argumentum ad hominem): This fallacy is committed when you attack a person s character or personal circumstances in order to oppose or discredit their argument or viewpoint.

Argument form: In logic, the argument form or test form of an argument results from replacing the different words, or sentences that make up the argument with letters, along the lines of algebra; the letters represent logical variables. The sentence forms which classify argument forms of common important arguments are studied in logic.Thus, form is the manner in which all the constituents of the reasoning (premise as well as conclusion) are used.

Appeal to Force (argumentum ad baculum, literally argument from the stick): A fallacy committed when an arguer appeals to force or to the threat of force to make someone accept a conclusion.

Appeal to Ignorance (argumentum ad ignorantium): In this fallacy, someone argues that a proposition is true simply on the grounds that it has not been proven false (or that a proposition must be false because it has not been proven true).

Appeal to Pity (argumentum ad misericordiam): A fallacy committed when the arguer attempts to evoke pity from the audience and tries to use that pity to make the audience accept a conclusion.

Appeal to the People (argumentum ad populum): A fallacy committed when an arguer attempts to arouse and use the emotions of a group to win acceptance for a conclusion.

Aristotle: Aristotle was the founder of logic as the science. He was one of the first scholars to carry out a systematic study of the propositions and arguments. Modern logic extends far beyond the work of traditional Aristotelian logic. Modern logicians, unlike the traditional logicians, have used mathematical methods and techniques to test the validity of arguments.

Aristotelian Four-fold Classification of Categorical Propositions: Aristotle classified categorical proposition in four, based on Quality and Quantity distribution:

Universal Affirmative – All S is P. – A Type Proposition

Universal Negative – No S is P. – E Type Proposition

Particular Affirmative– Some S is P. – I Type Proposition

Particular Negative – Some S in not P. -O Type Proposition

B

Begging the Question Fallacy (petitio principii, meaning postulation of the beginning): This is committed when someone employs the conclusion (usually in some disguised form) as a premise in support of that same conclusion.

Boolean analysis of Categorical Propositions: Boolean interpretation of categorical propositions depends on the empty classes. A class is either empty or has members. Universal propositions are equated to empty class (Zero) and particular propositions are not equate to empty class.

C

Categorical Proposition: A categorical proposition is simply a statement about the relationship between categories. It states whether one category or categorical term is fully contained with another, is partially contained within another or is completely separate.

Categorical Syllogism: A categorical syllogism is an argument consisting of exactly three categorical propositions (two premises and a conclusion) in which there appear a total of exactly three categorical terms, each of which is used exactly twice.

Composition, Fallacy of :A fallacy in which someone uncritically assumes that what is true of a part of a whole is also true of the whole.

Complex Question: This fallacy is committed when a question is asked in such a manner that a particular belief or assumption has been accepted as the basis for answering the question.

Conclusion: In any argument, the proposition to which the other propositions in the argument are claimed to give support, or for which they are given as reasons.

Conjunction: A truth-functional connective meaning "and", symbolized by the dot. A statement of the form p.q is true if and only if p is true and q is true.

Contingent: Most statement forms are neither tautologous nor self-contradictory; their truth-tables contain both **T**s and **F**s and called as contingent.

Contradiction: A statement form whose column contains nothing but **F**s, on the other hand, is said to be self-contradictory.

Contradictory: Propositions are contradictory when the truth of one implies the falsity of the other, and conversely. Here we see that the truth of a proposition of the form *All S are P* implies the falsity of the corresponding proposition of the form *Some S are not P*. A and O or E and I are contradictories.

Contrary: Propositions are contrary when they cannot *both* be true; if one is true, then other must be false. They can both be false. Note that corresponding A and E propositions, while contrary, are not contradictory. While they cannot both be true, they *can* both be false.

Conditional or Hypothetical Proposition: A type of compound proposition, it is false only when the antecedent is true and the consequent is false.

Connotation refers to the set of characteristics essentially possessed by every object denoted by the term. For example, man, Gita, Mohan, Kamal etc. Man means that possess morality and rationality. Morality and rationality = Connotation.

Contraposition: An inference formed by replacing the subject term of a proposition with the complement of its predicate term, and replacing the predicate term by the complement

of its subject term. Not all contrapositions are valid. Contraposition is a reliable immediate inference for both *A* and *O* propositions; that is, the contrapositive of any *A* or *O* proposition is true if and only if the original proposition was true. Thus, in each of the pairs, both propositions have exactly the same truth-value.

Conversion: An inference formed by interchanging the subject and predicate terms of a categorical proposition. Not all conversions are valid. Conversion grounds an immediate inference for both *E* and *I* propositions That is, the converse of any *E* or *I* proposition is true if and only if the original proposition was true. Thus, in each of the pairs noted as examples either both propositions are true or both are false.

D

Deductive Argument: A deductive argument is an argument in which it is thought that the premises provide a guarantee of the truth of the conclusion. In a deductive argument, the premises are intended to provide support for the conclusion that is so strong that, if the premises are true, it would be impossible for the conclusion to be false.

Deductively valid: An argument is deductively valid if, whenever all premises are true, the conclusion is also necessarily true. An argument that is not valid is said to be ‘’invalid’’.

Deductive Reasoning eductive reasoning works from the more general to the more specific. Sometimes this is informally called a “top-down” approach. We might begin with thinking up a theory about our topic of interest. We then narrow that down into more specific hypotheses that we can test. We narrow down even further when we collect observations to address the hypotheses. This ultimately leads us to be able to test the hypotheses with specific data — a confirmation (or not) of our original theories.

Division, Fallacy of: A fallacy in which someone uncritically assumes that what is true of the whole must be true of the parts.

Disjunction: Truth-functional connectives meaning “or”, so connected are called “disjuncts.”

Disjunctive Syllogism: This syllogism presents two alternatives in an “either . . . or” form; one of the alternatives is for formal reasons assumed to be necessarily true, so that to deny one leaves the other as the only possibility. The two possibilities, called disjuncts, are stated in the major premise; one is and must be denied in the minor premise; and the other is affirmed in the conclusion.

Dilemma: A dilemma means double proposition, it is a problem offering at least two solutions or possibilities, of which none are practically acceptable; one in this position

has been traditionally described as being *impaled on the horns of a dilemma*, neither horn being comfortable.

Denotation denotes the objects, connotation connotes the characteristics. Denotation of a term refers to the objects or things which possess the quality. Man= Denotation.

Distribution of Terms: A categorical term is said to be distributed if it contains all members of a categorical term. It is undistributed if the categorical proposition that contains it says does not something about all members of that categorical term.

Disjunctive Proposition: A type of compound proposition; if true, at least one of the component of propositions must be true.

Double Negation: An expression of logical equilalance; a rule of inference that permits the validity mutual replacement of any symbol by the negation of the negation of that symbol. Symbolized as ~~p.

E

Eduction: Eduction is of three types –Conversion , Obversion and Contraposition. These are not part of the square of opposition. They involve certain changes in their subject and predicate terms. The main concern is to converse logical equivalence.

Enthymeme: An enthymeme, in its modern sense, is an informally stated syllogism (a three-part deductive argument) with an unstated assumption that must be true for the premises to lead to the conclusion. In an enthymeme, part of the argument is missing because it is assumed. In a broader usage, the term "enthymeme" is sometimes used to describe an incomplete argument of forms other than the syllogism.

Equivocation, Fallacy of: In this fallacy, a particular word or phrase is used with one meaning in one place, that word or phrase is used with another meaning in another place, and what has been established on the basis of the one meaning is regarded as established with respect to the other meaning. As a result, the conclusion depends on a word (or phrase) being used in two different senses in the argument. The premises are true on one interpretation of the word, but the conclusion follows only from a different interpretation.

Euler diagrams: Euler diagrams or Euler circles are a diagrammatic means of representing sets and their relationships. They are the modern incarnation of Euler circles, which were invented by Leonhard Euler in the 18th century. Euler diagrams usually consist of simple closed curves in the plane which are used to depict sets. The spatial relationships between the curves (overlap, containment or neither) corresponds to set-theoretic relationships (intersection, subset and disjointness).

Excluded middle, Principle of: This principle asserts that *every statement is either true or false*. Using our notation we may rephrase it by saying that the principle pÚ ~p must be true, that every such statement is a tautology.

Exclusive premises, Fallacy of: A formal mistake in which both premises of a syllogism are negative.

Existential fallacy: As a formal fallacy, the mistake of inferring a particular conclusion from two universal premises.

Existential Import: Existential import means the commitment to the existence of certain object or thing, which is implied by the subject of a given proposition. If the class designated by the subject of the proposition has members, then the proposition is said to have existential import otherwise not. According to George Boole, a prominent modern logician, the universal propositions A and E do not have existential import while the particular proposition I and O have it.

F

Fallacy: Fallacy is an error of reasoning, it is mistake in judgment. It is a type of mistake in argumentation that might appear to be correct, but which proves upon examination not to be so. An argument is governed by certain rules, and violation of any one of them makes an argument invalid and fallacious.

False Cause Fallacy: A fallacy involving faulty reasoning about causality.

Fallacy of Drawing an affirmative conclusion from a negative premise, or drawing a negative conclusion from an affirmative premise. A formal mistake in which one premise of a syllogism is negative but the conclusion is affirmative.

False Dilemma, Fallacy of: A fallacy committed when someone assumes there are only two alternatives, eliminates one of these two, and concludes in favor of the second, when more than the two stated alternatives exist, but have not been considered.

Figures of Syllogism: The position of middle term in the premises decides the figure of a syllogism. The middle term can occur in four different ways in a standard form categorical syllogism.

Form: The form or logical form of an argument is the representation of its sentences using the formal grammar and symbolism of a logical system to display its similarity with all other arguments of the same type.It consists of stripping out all spurious grammatical features from the sentence (such as gender, and passive forms), and replacing all the expressions specific to the subject matter of the argument by schematic variables. Thus, for example, the expression ‘all A’s are B’s’ shows the logical form which is common to

the sentences ‘all men are mortals’, ‘all cats are carnivores’, ‘all Greeks are philosophers’ and so on.

Formal Fallacy: those outside the content of language–i.e., a fallacy that arises from an error in the form of an argument; it is (usually) independent of content.

Formally valid: An argument is formally valid if its form is one such that for each interpretation under which the premises are all true also the conclusion is true.

Four terms, Fallacy of: A formal mistake in which a categorical syllogism contains more than three terms.

G

Genetic Fallacy: A fallacy committed when someone attacks a view by disparaging the view s origin or the manner in which the view was acquired.

George Boole (1815-1864): Boole was a well known British mathematician and logician. He in 1840 established the technique of using mathematical symbols and operations to solve problems in logic. He devised a method of expressing logical relationships in terms of algebra, now known as “Boolean Algebra.”

Guilt by association Fallacy :A type of abusive ad hominem in which one person attacks a second person s associates in order to discredit the person and thereby his view or argument.

H

Hasty Generalization, Fallacy of: A fallacy committed when someone draws a generalization about a group on the basis of observing an unrepresentative sample of the group.

Hypothetical Syllogisms

In a hypothetical syllogism the first premise (or major proposition) presents an uncertain condition (“if A, then B”) or a problem (“either A or B”; “S and T cannot both be true”) which must then be properly resolved by the second premise so that a valid conclusion can follow. The resolution of the problem is always in the form of affirmation or denial.

I

Identity, Principle of: This principle asserts that *if any statement is true, then it is true.* Using our notation we may rephrase it by saying that the principle of identity asserts that every statement of the from pÉp must be true, that every such statement is tautology.

Illicit major, Fallacy of : A formal mistake in which the major term of a syllogism is undistributed in the major premise, but is distributed in the conclusion.

Illicit minor, Fallacy of: A formal mistake in which the minor term of a syllogism is undistributed in the minor premise, but is distributed in the conclusion.

Immediate inference: In immediate inference there is one and only one premise and from this sole premise conclusion is drawn. Various kinds of immediate inferences may be distinguished traditionally including conversion, Obversion and contraposition.

Induction: Induction like deduction is a form of reasoning; it is a type of inference in which from some observed instances a conclusion is drawn about the unobserved instances of the same kind. Though the premises do not necessarily imply the conclusion in induction, yet the premises are good reason for drawing the conclusion. No empirical science, natural or social science, which aims to describe nature, world, or society, can do without induction. Infact all sciences, except pure mathematics and formal logic, are making extensive use of inductive inferences**.**

Inductive Arguments: An inductive argument is an argument in which it is thought that the premises provide reasons supporting the probable truth of the conclusion. In an inductive argument, the premises are intended only to be so strong that, if they are true, then it is unlikely that the conclusion is false.

Inductive Reasoning: Inductive reasoning works the other way, moving from specific observations to broader generalizations and theories. Informally, we sometimes call this a "bottom up" approach (please note that it's "bottom up" and not "bottom**s** up" which is the kind of thing the bartender says to customers when he's trying to close for the night!). In inductive reasoning, we begin with specific observations and measures, begin to detect patterns and regularities, formulate some tentative hypotheses that we can explore, and finally end up developing some general conclusions or theories.

Inference: Inference is the act or process of deriving a conclusion based solely on what one already knows. Inference has two types. They are deductive, when we move from the general to the particular and inductive where the conclusion is wider in extent than the premises. In intelligence testing, mostly deductive inference ability is judged.

Informal Fallacy: those dependent upon language– i.e., a fallacy that arises from the content of an argument (the what is said, not the how it is said).

Irrelevant Conclusion, Fallacy of (ignoratio elenchi, meaning ignorance of the proof):A fallacy in which someone puts forward premises in support of a stated conclusion, but the premises actually support a different conclusion.

Inversion: Inversion is yet another form of immediate inference which is not independent; it makes use of conversion and Obversion. In inversion the subject of the conclusion is contradictory of the subject of the premise, and predicate of the conclusion is contradictory of the predicate of the premise. Inversion of all categorical propositions is valid.

L

Laws of Thought: Three tautologies-the principle of identity, the principle of contradiction, and the principle of excluded middle- that have sometimes been held to be the fundamental principles of all reasoning.

Logic: Logic is the study of the methods and principles used to distinguish correct reasoning from incorrect reasoning. Knowledge of logic helps one to face a problem in a more orderly and systematic way and in many cases makes the solution less difficult and more certain. Like any other active field of study, it too has grown in many directions. Today, logic is both a branch of philosophy and a branch of mathematics. It is applications as well known in the area of artificial intelligence.

Logical Deduction: Another important factor in logical reasoning is logical deduction. Deriving an inference from units of arguments which are called proposition in logic or deducing an inference from statements is called logical deduction. For example:

All men are mortal.

Raveesh is a man.

Therefore, Raveesh is mortal.

From statement (a) and (b) we derive a logical conclusion that Raveesh is mortal.

Logical Reasoning: Reasoning is an art as well as a science; it is something we do as well as understand. The mental recognition of cause –and –effect relationship is called 'reasoning'. It may be prediction of an event from an observed cause or the inference of a cause from an observed event. Logical Reasoning is a process of passing from the known to the unknown. It is the process of deriving a logical inference from a hypothesis through reasoning.

M

Major Premise: Since one of the premises of the syllogism must be a categorical proposition that affirms some relation between its middle and major terms, we call that the major premise of the syllogism.

Major Term: The major term of the syllogism is whatever is employed as the predicate term of its conclusion.

Material Equivalence: A truth-functional relation (symbolized by the three bars sign, @) that may connect two statements. Two statements are materially equivalent when they are both true, or when they are both false, that is, when they have the same truth value.

Material Implication: A truth-functional relation (symbolized by the horseshoe, É) that may connect two statements. The statement "p materially implies q" is true when either p is false, or q is true. It is a weak relation: it does not refer to the meaning of the statements connected, but mere asserts that it is not the case both that p is true and q is false.

Mediate Inference: In mediate inference conclusion draw from more than two premises. We also call it syllogism. It has many types. For example, Categorical, Disjunctive, Hypothetical etc.

Middle Term: In a standard form syllogism the middle term doesn't occur in the conclusion at all, but must be employed in somewhere in each of its premises; hence, we call it the middle term.

Minor Term: One of those terms must be used as the subject term of the conclusion of the syllogism, and we call it the minor term of the syllogism as a whole.

Minor Premise: The other premise, which links the middle and minor terms, we call the minor premise.

Moods of Syllogism: Mood of a syllogism means arrangement of premises and conclusion. For instance AAA in the first figure is expressed as:

All M is P

All S is M./ Therefore all S is P.

N

Negation: Denial; symbolized by the tilde or curl, **~p** simply means "it is not the case that p" and may be read as "not-p."

Non Causa Pro Causa fallacy : In a *Non Causa Pro Causa fallacy* (not the cause for the cause) someone claims that A is the cause of B, when in fact (1) A is not the cause of B, but (2) the mistake is not based merely on one thing coming after another thing. One

version of this fallacy is the fallacy of accidental correlation: the arguer concludes that one thing is the cause of another thing from the mere fact that the two phenomena are correlated.

Noncontradiction ,Principle of: This principle asserts that *no statement can be both true and false*. Using our notation we may rephrase it by saying that the principle of noncontradiction asserts that every statement of the form p ·~p must be false, that every such statement is self-contradictory.

O

Obversion: An inference formed by changing the quality of a proposition and replacing the predicate term by its complement. Obversion is valid for any standard form Categorical proposition. Obversion is the only immediate inference that is valid for categorical propositions of every form. In each of the instances, the original proposition and its obverse must have exactly the same truth-value, whether it turns out to be true or false.

Opposition: Any logical relation, including Subalternation, among the kinds of categorical proposition (A,E, I and O) exhibited on the square of opposition.

P

Particular Proposition: A proposition that refers to some but not to all the members of a class. The particular affirmative proposition (I) say that "Some S is P." The particular negative proposition (O) says that "Some S is not P." In both traditional and modern logic, particular propositions are understood to have existential import

Poisoning the Well: The use of emotionally charged language to discredit an argument or position before arguing against it.

Post Hoc Ergo Propter Hoc fallacy: In a *Post Hoc Ergo Propter Hoc fallacy* (after this, therefore, because of this) someone concludes that A is the cause of B simply on the grounds that A preceded B in time.

Premise: The premises are those statements that are taken to provide the support or evidence; the conclusion is that which the premises allegedly support.

Proposition: A proposition is a judgment expressed in a language and a judgment is a mental act in which two or more than two ideas are combined together. A **proposition** links nouns, pronouns and phrases to other words in a sentence. The word or phrase that the proposition introduces is called the object of the proposition.

Propositional Function: In quantification theory, an expression from which a proposition may result either by instantiation or by generalization.

Q

Quality: An attribute of every categorical proposition determined by whether the proposition affirms or denies some form of class inclusion. Every categorical proposition is either affirmative or negative in quality.

Quantity: An attribute of every categorical proposition, determined by whether the proposition refers to all members or only to some members of the class designated by its subject term. Thus, every categorical proposition is either universal or particular in quantity.

R

Red Herring Fallacy: A fallacy committed when the arguer tries to divert attention from his opponent s argument by changing the subject and drawing a conclusion about the new subject.

S

Sentence: A unit of language that express a complete thought; sentence may express a proposition, but is distinct from a proposition it may be used to express.

Slippery Slope Fallacy (or domino argument): In this fallacy, someone objects to a position P on the grounds that P will set off a chain reaction leading to trouble; but no reason is given for supposing the chain will actually occur. Metaphorically, if we adopt a certain position, we will start sliding down a slippery slope and we won t be able to stop until we slide all the way to the bottom (where some bad result lies in wait).

Snob Appeal Fallacy: This is committed when the arguer claims that if you will adopt a particular conclusion, this will place you in a special, elite group or will make you better than everyone else.

Sorites: An argument in which a conclusion is inferred from any number of premises through a chain of syllogistic inferences.

Special Pleading, Fallacy of: In this fallacy, the arguer applies a principle to someone else s case but makes a special exception to the principle in his own case.

Square of Opposition: Any logical relation among the kinds of categorical propositions (A, E,I and O) exhibited on the Square of Opposition. There are four ways in which

propositions may be "observed" –as Contradictories, Contraries, Sub-contraries and sub-alternation. These are represent with an important and widely used diagram called the Square of Opposition.

Statement: A proposition; what is typically asserted by a declarative sentence, but not the sentence itself. Every statement must be either true or false, although the truth or falsity of a given statement may be unknown.

Statement Forms: Any sequence of symbols containing statement variables but no statements, such that when statements are consistently substituted for the statement variables, the result is a statement.

Straw Man Fallacy: A fallacy committed when an arguer (a) summarizes his opponent's argument but the summary is an exaggerated, ridiculous, or oversimplified representation of the opponent s argument that makes the opposing argument appear illogical or weak; (b) the arguer refutes the weakened, summarized argument; and (c) the arguer concludes that the opponent s actual argument has been refuted.

Subject and Predicate: The first term in the proposition is the subject. The second term is the predicate. For example: Some dogs (subject) are friendly (predicate).

Suppressed Evidence, Fallacy of: In this fallacy, evidence that would count heavily against the conclusion is left out of the argument or is covered up.

Subalternation: Two propositions are said to stand in the relation of Subalternation when the truth of the first ("the superaltern") implies the truth of the second ("the subaltern"), but not conversely. In traditional logic, the truth of an A or E proposition implies the truth of the corresponding I or O proposition, respectively. Consequently, the falsity of an I or O proposition implies the falsity of the corresponding A or E proposition, respectively. However, the truth of a particular proposition does not imply the truth of the corresponding universal proposition, nor does the falsity of an universal proposition carry downwards to the respective particular propositions.

Subcontrary: Propositions are subcontrary when it is impossible for both to be false; it one is false the other must be true. They can both be true. I and O propositions are subcontrary, but not contrary or contradictory.

Syllogism: Any deductive argument in which a conclusion is inferred from. Two statements which are assumed to be true (or premises) that lead to a conclusion.

Syllogistic Moods: Logicians also speak of syllogistic moods. Moods are defined as the arrangement of the premises according to quantity (universal or particular) and quality (affirmative or negative).

T

Tautology: A statement form all of whose substitution instances must be true. The truth-table contains nothing but Ts is said to tautologious.

Truth and Validity: The term validity (also called logical truth, analytic truth, or necessary truth) as it occurs in logic refers generally to a property of particular statements and deductive arguments. Although validity and logical truth are synonymous concepts, the terms are used variously in different contexts. Whether or not logical truth is analytic truth is a matter of clarification.

Truth table: An array on which all possible truth values of compound statements are displayed, through the display of all possible combinations of the truth values of their simple components. A truth table may be used to define truth-functional connectives; it may also be used to test the validity of many deductive arguments.

Truth Value: The status of any statement as true, or false (T or F).

Truth-Functional Compound Statement: A compound statement whose truth function is wholly determined by the truth values of its components. They also known as truth functional connectives.

Truth-Functional Component: Any component of a compound statement whose replacement by another statement having the same truth value would not change the truth value of the compound statement.

Truth-Functional Connective: Any logical connective (including conjunction, disjunction, material implication, and material equivalence) between the components of a truth –functional compound statement.

Tu Quoque Fallacy (you re one, too):A type of abusive ad hominem that attempts to discredit a person s viewpoint or position by charging the person with hypocrisy or inconsistency. Essentially, the charge is, We don t need to take his argument seriously because he doesn't practice what he preaches.

U

Undistributed middle, Fallacy of: A formal mistake in which a categorical syllogism contains a middle term that is not distribute in either premise.

Uniform translation: Techniques (often requiring the use of auxiliary symbols making possible the reformation of a syllogistic argument into standard form, so that it may be accurately tested.

V

Validity: To say that an argument is valid is to say that the conclusion really does follow from the premises. That is, an argument is valid precisely when it cannot possibly lead from true premises to a false conclusion.

Venn diagrams: Venn diagrams or set diagrams are diagrams that show all hypothetically possible logical relations between a finite collections of sets(groups of things). Venn diagrams were conceived around 1880 by John Venn. They are used in many fields, including set theory, probability, logic, statistics, and computer science.

Venn and Boolean Expression of Categorical Proposition: The modern interpretation of categorical logic also permits a more convenient way of assessing the truth-conditions of categorical propositions, by drawing Venn diagrams, topological representations of the logical relationships among the classes designated by categorical terms.

W

Weak Analogy, Fallacy of : A fallacy committed when an analogical argument is presented but the analogy is too weak to support the conclusion.

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