Critical Thinking Terms

# Glossary

These are some of the mental tools in your critical thinking tool box – that is words used to analyze, talk or write about thinking. Most of these words come up in the lectures and tutorials in the course. Some you might come across while reading about critical thinking or rhetoric.

This is not an exhaustive list, so there is a URL given at the end of this glossary to an online resource.

Note: C.f. stands for *cross refer to.* When you see this abbreviation there is a cross reference somewhere else that may supplement the definition.

A posteriori *–* Latin for reasoning or deductions made from known facts or established knowledge that is not a prediction or a hypothesis. Can also be used as an adjective “a posterior knowledge”, meaning knowledge that is dependent on evidence or fact that has already been established.

A priori*-*Latin for reasoning or deductions made without the need for known facts or knowledge, that is can be a hypothesis or prediction, e.g. stangelets are an example of a priori reasoning. Can also be used as an adjective “a priori knowledge”, meaning a claim that is true without having to be backed by empirical evidence, e.g. all bachelors are unmarried.

Abductive reasoning- One of three types of reasoning, the others being the more familiar deductive and inductive reasoning. It has been described as reason that is most likely to lead to a conclusion because it deals with a subject or knowledge that is complete as not all the facts can be proven. It has been called the type of reasoning that requires a leap of faith. C.f. <http://www.butte.edu/departments/cas/tipsheets/thinking/reasoning.html>

Alternative views – This is another interpretation of the same set of facts or points of information.

Analysis – How information has been dissected to give meaning, e.g. data analysis. ***This is the paramount indication of critical thinking.*** It is the cognitive process of “identifying the intended and actual inferential relationships among statements, questions, concepts…or other forms of representation intended to express beliefs, judgments…information, or opinions.”(Facione, 1990, p7).[[1]](#footnote-1)

Anecdotal evidence – Proof which is possibly only true for some specific instances, not necessarily for all instances. Proof that may not necessarily be replicated by formal experiment.

Appeal – An appeal is a technical term for a rhetorical device used to make an argument more persuasive. Some forms of persuasion are listed below, as can be seen some are more rational than others. When unmasking assumptions and evaluating arguments, attention should be paid to the type of appeal being made and whether it is ethical in the context, e.g. an appeal to emotion to raise money may or may not be ethical depending on what pressure is being applied to the emotion of the audience.

Appeal to authority – This is an attempt to persuade an audience that something is correct and should be accepted because it is endorsed by an authority or an organization with a reputation for good governance.

Appeal to celebrity/fashion – This is an attempt to persuade is made to the audience’s desire to emulate or be like a famous person or to follow the latest social trend, fashion here refers to more than clothes, it may also refer to taking selfies at graduation ceremonies because many people did so this year.

Appeal to emotion – This persuasive technique plays on an audience’s feelings, it uses the Aristotelean notion of *pathos*. Its use may be valid e.g. in a court case to ask for clemency for a pregnant murderer not be executed before her baby is born, since the baby is innocent of the crime. An appeal to emotion may be suspect when it is used to make an audience feel they are lacking if they do not care about a particular issue, e.g. in an advertisement to allow methadone to be sold as a heroine substitute in mainstream pharmacists.

Appeal to identity – This persuasive technique works on an audience’s sense of group versus self-identity, e.g. “Count on me, Singapore”, “We are Singapore”, “Home” and other National Day Parade songs work on national identity.

Appeal to ignorance (argumentum ad ignorantium) – based on what cannot be proven false or wrong, Note, it does not mean to persuade others by leveraging on their ignorance or lack of knowledge!

Appeal to logic – This persuasive technique relies on the use of logic or a systematic set of propositions in order to convince the audience of the credibility of the argument. It uses the Aristotelean notion of *logos*, and is seen as the strongest form of persuasion and therefore also argument. This persuasive technique lends itself to technological and scientific arguments, but there may be flaws in an argument that entirely relies on logos, consider for instance, the sorts of argument that would have had to be debated before the hydrogen bomb was dropped in Hiroshima.

Appeal to morality – This persuasive technique works on the audience’s sense of what is right, moral, or ethical. It uses the Aristotelean notion of *ethos*, e.g. International pressure on Ukraine to give more access to the crash site of MH17 is based on an appeal to morality.

Appeal to popular belief/commonality – This persuades through asking the audience to consider some common value in humanity, or some belief that many people value, e.g. family values, a problem may arise when the definition of the key word, in this case “family” changes form one section of the population to another, such as traditional, blended and pink family values. An appeal to commonality works when there is a strong association between the audience and the issue at hand, e.g. environmental issues and a sustainable fishery idea.

Appeal to reason – see above, appeal to logic.

Appeal to self-interest – This persuasive technique leverages on Maslow’s hierarchy of needs to convince an audience that a specific course of action is for their own good, be it personal security, self-worth, fear of hunger etc. This is most often used in advertising, e.g. “Because you deserve it”.

Argument – Any text graphic, written or spoken that uses reasons to support the author’s position or point of view.

Assertion – Statements that are made without any supporting evidence of justification.

Authorial bias – The inclination or opinion that a writer or a speaker has for a particular point of view.

Authorial voice – This is the opinion of the writer or the speaker, and not the writer or the speaker quoting from or referring to anyone else’s view. The authorial voice is important in any argument as it shows the author’s critical thinking value add.

Bandwagon – This term is a metaphor for those who agree or support a particular idea or campaign because it is fashionable or popular. These people are said to have “jumped onto the bandwagon” because they have supported something without knowing why they have done so. They have been caught up with the crowd.

Bias – Prejudice or propensity towards a particular view.

Ceteris paribus *–* Latin for “all things being equal”. It is used as a condition to preface a statement. E.g. “Ceteris paribus the economy continues to grow at 5% annually, Nagaland will reach its projected sales target by 2015.”

Claim – A declarative (information giving) sentence which may be true or false. All arguments have claims, when analyzing arguments, the truth or otherwise of claims have to be assessed. Claim and declarative statements are also term in formal logic and C programming, but the definitions in there are different.

Conclusion – When writing or speaking, it is the natural or logical end point which all the reasons given in an argument lead to. It can also be a judgment or summative decision made after reading or listening to someone else’s argument.

Construct an argument – This means putting together a thesis or hypothesis, a line of reason with a selection of reasons that develop or support the thesis or hypothesis and a robust analysis of the points of information,. All this leads to a warranted conclusion. There should be care to ensure there are no unfair instated assumptions, unwarranted inferences or fallacies in the reasons or the line of reasoning. Care must also be given the credibility of sources and the accuracy of data. The entire cognitive process should be expressed cogently, so for instance, care must be taken over word choice and expression of thought.

Counter argument – This refers to an opposing viewpoint or an objection raised against a specific argument or claim.

Deconstruct an argument – This means to take apart an argument in order to assess its component parts and then to evaluate the argument as a whole.

Deductive reasoning – This is the type of reasoning that leads to a confirmed or guaranteed conclusion. This is because all the known facts are given or can be worked out. Mathematics is based largely on deductive reasoning. C.f .<http://www.butte.edu/departments/cas/tipsheets/thinking/reasoning.html>

It also refers to the sort of line of reasoning in an argumentative essay where the author states the thesis at the start of the essay and then sets out his/her reasons and evidence in support of the thesis.

Definition – The meaning of a key word or phrase as used in an argument, which need not be the same as the dictionary meaning. But which has to be specified in the argument.

Disposition – Habit or attitude toward a trait of behavior. A critical thinking disposition is specifically the use of a self-regulatory systematic means to analyze information. Such a disposition generally shows diligence in seeking as much information as possible, careful attention to detail, respect for the views of others, consideration in the expressions of one’s own stance, resilience in working out solutions and open-mindedness.

Double-speak –Word or phrase that is deliberately unclear in meaning, could be a political or military euphemism, that is a nice sounding expression for something that is actually unpleasant, e.g. “friendly fire” and “collateral damage” – for being shot at by one’s own side and being killed therefore by accident.

Euphemism – A word or phrase that is used to tactfully or politely refer to something unpleasant or socially taboo, e.g. “Sanitation engineer” instead of “rubbish man”. It is not usually meant to be deliberately deceiving unlike a double-speak expression.

Evaluation – Assessing the claims, assertions, opinions or other representations of an argument or idea. Evaluation necessitates identifying relevant points for the argument, credibility of sources, logical consistency, valid assumptions and appeals.

Evidence – Proof that supports a point or conclusion or line of argument. This may be data, observation, visual representation e.g. photographs or video, artefact, e.g. fossils, books, antiques etc.

Explanation – This is the process either written or spoken of justifying or giving reasons for a belief or a decision. This is the verbal representation of one’s thought processes.

Fact; Factual evidence – Proof that is based on something that can be proven by scientific experiment or replicating a social science experiment, or something which is true by popular observation e.g. the sun rises in the east and sets in the west.

Fallacy – An error in reasoning or a flaw or defect in a reason or a line of reasoning. It can also refer to an argument being entirely fallacious, e.g. the flat Earth theory was proven completely fallacious (adjective for fallacy), once space travel allowed Man to see the planet from above.

False logic – This is where the propositions do not add up to a conclusion as stated probably because the context is not fully explained or some conditions are not met, e.g. Birds have wings. Airplanes have wings. Therefore airplanes are birds. False logic is also a term in mathematics, Boolean logic and computer science – but the definitions in those other subjects are different.

Generalization – There are valid generalizations and invalid generalizations. A valid generalization is an overall statement describing a consistently observed pattern or trend in data or some other empirical evidence or social phenomenon. An invalid generalization is a statement purporting to describe a pattern or trend in data, other empirical evidence or social phenomenon that is based on insufficient sampling, lacking confirmatory evidence or using anecdotal evidence. Invalid generalizations contribute to a weak argument.

Habit of mind – Synonym for critical thinking disposition.

Inductive reasoning – This is the type of reasoning that will give a conclusion that is probably valid. Cf <http://www.butte.edu/departments/cas/tipsheets/thinking/reasoning.html> It also refers to the sort of line of reasoning in an argumentative essay where the author starts with a specific question, then builds up a line of reasoning that leads towards a conclusion. C.f .<http://www.ehow.com/how_5158434_write-inductive-essay.html>

Inference – Critical thinking skill used to identify the information that is most pertinent to drawing a reasonable conclusion, hypothesis, theory or educe consequences arising from data, evidence, principles, observations or other forms of representation of information or knowledge.

Interpretation – A specific person’s explanation of a phenomenon or an event. Please see also ‘explanation”.

Judicious – Adjective to describe when good or sound judgment or reasoning is used. E.g. That argument used the data judiciously to support the inferences and conclusion; it did not make too big a claim.

Justification – The explanation for holding a particular view.

Line of reasoning – This is the order in which the points selected to support an argument are arranged. The usual line of reasoning is that one point should lead into the next point and so build up a convincing case for the argument.

Justification/justify – The backing up or support of an assertion or explanation with reasons or proof.

Logical consistency – This means that the points do not contradict each other within the argument. Also all the reasons support the conclusion.

Man of straw – This is a kind of fallacy in argumentation when an author deliberately uses something that has been distorted or represented absurdly and is thus easy to refute in order to make his/her argument look stronger, e.g. inventing a fictitious person and story to illustrate a point, taking an opponents’ words out of context. C.f. <http://skepdic.com/refuge/ctlessons/lesson9.html>. It is sometimes referred to as Aunt Sally.

Non sequitur – Latin for “does not follow from”. Used to show that one point is illogical following from the point before.

Open-minded – This is an attitude or a disposition where one is at least receptive to another point of view, and to be willing *if necessary* to change one’s own view in the light of convincing new evidence or better reasoning.

Position – A point of view supported by reasoning. Cf *reasoning*.

Predicate – The basis for which an argument is made, a technical term taken from formal logic.

Premise- Propositions used that are held to be true and used as a basis for an argument. E.g. Our premise that the rule of law is essential in human society means that law enforcement is integral part of any country.

Prima facie *–* Latin term meaning “on the surface” or at face value.

Propaganda - Information that is transmitted by an organization or government to disseminate a particular view on a topic. This is usually persuasive in nature and is different from public education as it has a more subjective content.

Proposition – A statement that is presented as true as part of an argument. This may turn out to be false after evaluation, or less valid than originally presented.

Public education – Information disseminated to inform the general population. Moe objective content than propaganda. E.g. a public education poster on wearing condoms to avoid STD is different to one that says having abortions is murder.

Reasoning – This is the process of thinking, also known as cognitive process. Cf *explanation.*

Reflection – Thinking back to an action, event or a process to consider what lessons may be learned in order to make better progress. A critical thinking reflection is one in which one looks back on a specific action, event or process in a systematic way. Critical thinking practitioners have developed a few templates that others may use, or one can develop one’s own. Please see Tutorial 17 for more details.

Refutation – In an argument, there is a claim which may be followed by a counter claim. The refutation is the counter claim to the counter claim that reinstates the validity of the original claim. E.g. *Argument*: Sustained silent reading is a good way of improving one’s language abilities in a language. *Counter argument:* However, does everyone have enough time to spend on sustained, silent reading every day? *Refutation:* Stephen Krashen (1982,) has shown that reading for as little as 25 minutes a day is sufficient to build up language skills over time. It’s a method in argumentation that allows the proposition to anticipate an objection and to refute it before the opposition does so. It strengthens the proposition’s stance.

Self-regulation – Synonym for self-discipline, but especially with regard to applying a critical thinking checklist to all information that needs to be processed.

Stereotype – This is related to a generalization. A stereotype is an unjustified conclusion or judgment about a specific group. That is an unwarranted conclusion, e.g. doctors are rich, Chinese mothers are tiger moms. Stereotypes give rise to weak arguments.

Tautology – Unnecessary repetition, the author makes the same point but may use different words. Repeating a point does not reinforce it in a logical way.

Unstated assumption – This is a belief that the author of an argument assumes his/her audience shares. It is on this unstated assumption that the author rests his/her case. Unstated assumptions are valid if they are indeed commonly believed e.g. cultural assumption among members of the same culture, but they are not valid if only the author or a select group actually believes this, e.g. Libraries should have all sorts of books. Unstated assumptions are often found in propaganda pieces, but can also be found in most arguments. Most arguments following the western scientific model will have unstated assumptions about the conventions of good argument.

Value judgment – The value that someone places on something, this is essentially subjective. Consider this sentence: “More works of Shakespeare are sold annually than Jane Austen novels”. This is a statement of fact and can be verified with sales figures. However, “Jane Austen’s books are much easier to read and are more enjoyable than Shakespeare’s plays.” This is a value judgment because it is subjective.

Weasel words – Words that make claims sound true but are actually misleading or false. Weasel words are a sort of fallacy, e.g. “many experts …” – this makes it look as if something is endorsed by authorities in the field, but is so vague that there is no possibility of checking the credibility of sources. The use of such words weakens an argument. For more examples and a detailed explanation, C.f. <http://en.wikipedia.org/wiki/Weasel_word>

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| For other terms used in critical thinking, please see the useful glossary in the Critical Thinking Community Page. Please note that there might be some differences in the definition of some key terms, e.g. evaluation. Should there be a difference, use the definition we use in the course which is provided in this glossary.  <http://www.criticalthinking.org/pages/glossary-of-critical-thinking-terms/496> |

1. Facione, P.A. (1990). Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Milbrae,Ca. California Academic Press. Retrieved from: <http://assessment.aas.duke.edu/documents/Delphi_Report.pdf> [↑](#footnote-ref-1)