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**What is meant by Critical Thinking?**

Before we describe the idea of an argument as understood in this course, we should say something about the title of the course title—Critical Thinking.

Here are what others have said:

(1) Attitudes of inquiry that involve an ability to recognize the existence of problems and an acceptance of the general need for evidence in support of what is asserted to be true; (2) knowledge of the nature of valid inferences, abstractions, and generalizations in which the weight or accuracy of different kinds of evidence are logically determined; and (3) skills in employing and applying the above attitudes and knowledge.[[1]](#footnote-1)

Others have added:

* The ability to define a problem
* The ability to select pertinent information for the solution of a problem
* The ability to recognize stated and unstated assumptions
* The ability to formulate and select relevant and promising hypotheses
* The ability to draw valid conclusions and judge the validity of inferences.[[2]](#footnote-2)

Looking at the above, these skills have to do with what we might call the cognitive side of Critical Thinking. They include; inferring, implying, predicting, reflecting, judging, explaining, analyzing, solving, and interpreting

What I think is left out is another side, one that has to do with the human values.

On this side we find doing the above fairly, reasonably, honestly, equitability, and clearly. “Candid” and “disinterested” are also important.

Discussion: Can one do some of the bulleted list unfairly, dishonestly, etc?

We do not mean anything special by these descriptive terms and a straightforward dictionary definition is adequate. Two from the list, however, may require some review because they are frequently the source of mistakes and confusions. These words are “inferring” and “implying”.

To infer is to draw a specific conclusion from a set of given claims or evidence as in, “From the evidence at the crime scene, Sherlock Holmes inferred that Professor Moriarty was behind the crime.” To imply is to indirectly indicate a meaning by directly saying something different, as in “Sherlock Holmes implied that Dr. Watson was a medical expert by asking him to investigate the wound.” If Sherlock Holmes inferred that Dr. Watson was a medical expert it would have to be like his inference that Professor Moriarty was responsible, i.e., he would have to watch carefully the work of Dr. Watson, look up Dr. Watson’s medical school records, check to see that his diploma was not a fake, and then conclude, based in this evidence, that Dr. Watson was an expert.

Disinterested does not mean uninterested; (Ethical) lawyers generally hope the judge is disinterested (has no specific prejudice for or against a person) but not uninterested (liable to fall asleep).

Based on the above cognitive and ethical dimensions of critical thinking, we can see that the activity of giving reasons is also central. Fairly reflecting how? Fairly reflecting in giving reasons is the answer.

So now we need to talk briefly about giving reasons.

This course is about reasons and the activity of providing reasons. In general, we provide reasons for beliefs and actions based on beliefs, so we should start by saying something about beliefs. How do beliefs come about, how do we acquire our beliefs, how do beliefs originate?

In some cases, the answer comes from what we think are the causes of beliefs. I have heard some say, for example, that they were raised in a particular religion. This may mean that there was a set of conditions found in their family, school, and other places where certain beliefs were expressed and because of the constant repetition, reinforcement, and consistency of those expressions, that person came as a matter of cause to hold to those same beliefs. Now when a person says, "I was raised this way.” it suggests that at one point those beliefs were examined, reviewed and considered. Some continue holding to those beliefs, others modify them and still others might reject them. This shows that in certain cases, we acquire beliefs through reasons.

So now we come to a second way we acquire beliefs; we acquire beliefs because of reasons that support them. These are situations we might call rational context. We ask what we should believe about a certain subject or issue. We come to hold a belief after we consider the reasons in support of that belief as well as the reasons for the opposing claim. Based on the strength of the reasons, we come to hold a certain belief. This is to characterize “being convinced”. Being persuaded is slightly different. Being persuaded has to do with actions and when reasons are part of the persuasion, persuasion will be included in our study. Convince and Persuade:

Hermione, who remained *convinced that* she had acted for the best, started avoiding the common room. Harry and Ron supposed she had taken refuge in the library and didn’t try to *persuade her to* come back.

Harry Potter and the Prisoner of Azkaban, p. 233

Hermione’s state of mind brings us to the third source of beliefs, motivation. We sometimes believe things because it makes us feel good, or it is comfortable to believe such and such. It, no doubt, was comforting for many to believe that the church was a safe haven. One could send their children to these places with the comfort that confidence encourages. Now someone has said there are reasons that will undermine that comfort.

Our course is primarily about acquiring reasons as the second way described above. When reasons are provided, they are frequently provided in the form of an argument. We will, during the course, attempt to establish the standards for arguing properly and by implication distinguish between correct and incorrect argument. We will be interested in finding mistakes in this process, avoiding the pitfalls of fallacious arguments, and being able to correctly think through some complex issue.

**What is an argument? (Note how this is spelled. The verb is to argue. When you form the noun, the last “e” drops out. So, it is not like “arrange” when that verb is turned into a noun. There is a rule that governs this, but that would bore you).**

We define an argument by specifying two aspects of an argument: one specifies the context that is necessary for an argument to occur and the other refers to the structure we can isolate after examining a written version of an argument

**Context**

By context, we mean the situation, surroundings or settings in which an argument occurs. The first requirement is that the setting is one in which there is a dispute, some disagreement or contention on some question, or position. This in turn requires that the context contain two or more persons. (One can argue with oneself, disagree with oneself, etc., but these are derivative cases as is giving oneself a gift, or making a promise to oneself)

Having identified the context as one in which there is a dispute involving two or more persons, we can specify the aims and intentions of the parties involved. The aim of the parties in the dispute is to effect a change in the beliefs or actions of the other individuals in the dispute, through the use of reasons. This in turn assumes that the parties are also willing change their beliefs based on the reasons offered. (See previous discussion on acquiring beliefs).

**Structure**

The second major component in defining what is an argument is the form, or structure that we can identify. An argument consists of at least two claims, statements in the declarative mood that are asserted by persons in the context as true. These claims are structured in such a way that one or more of the claims are intended to *follow from* one or more of the other claims in the set. The claim or claims that are alleged to follow from the other claims in the set, we can call a *conclusion;* the claims that serve as the foundation for the conclusion we will call *premises.*

Not all disputes are arguments and not all structured set of claims are arguments.

Let's take the first case--not all disputes are arguments. People dispute with each other. Sometimes people in these situations resort to threats, intimidation, force, or stand on authority. When this is all that occurs, there is no argument. Some writers on this topic suggest threats, appeals to force or stands on authority are examples of fallacious or improper arguments. They support this position by citing examples where appeals to force, intimidation, etc., occur with some structure we have identified as an argument. We will discuss these cases later in the semester. For now, there must be a dispute and the structured set of claims where one or more of the claims in the structure are intended to follow from other claims within the structure before we have an argument.

As for the second case--Not all structured sets of claims are arguments‑‑we find situations where people present reasons in support of other claims and were the latter claims are to follow from these reasons, but it is not an argument, because there is no dispute. Typical examples occur when someone is explaining, teaching, or presenting a causal definition to a group unfamiliar with the topic.

For example, someone might present a structured set of claims, explaining how HIV causes AIDS. The explanation might consist of how the HIV invades the cell, how it attaches to the RNA, how the T‑cells are affected, etc. In a particular situation, one can take these descriptions and draw the conclusion that persons similarly described will contract AIDS. Unless there is some contention, or some dispute or perhaps doubt, there is not yet an argument.

Let’s look at some simple cases of structure. In some of the examples below there is this structure and in others, there is no such structure. Go through each example; identify the ones with structure and the ones that lack structure. Some of the following, when placed in a context where there is a dispute, would be arguments: others are not. Do not be fooled by words like "yet," "however," "nevertheless," etc. These words indicate some statements are in contrast to other statements in the series. The list below is examples one would find in a textbook. The exercise is to contrast statements in an argument structure with ones that do not exhibit structure. Let’s go through these examples briefly.

a. Since {Joe Biden’s popularity comes from different sectors of the Democrats} and since [his popularity is high among black women voters], (his popularity cannot be the result of just the black women voters).

b. {Illegal aliens are a benefit to the American economy} because [they are a supply of cheap labor] and because (they cannot apply for unemployment and welfare benefits).

c. {Co-educational housing is available at many universities}, and [its benefits to those universities are many]. However (many schools still refuse to offer co-ed housing).

d. {A test ban treaty will significantly slow the arms race}; thus [it will allow the major power to use more money to help poorer nations]. So (even poor nations would benefit from a test ban treaty).

e. {Diligent students usually do well in this course}; yet [many students fail to do their homework], and (others often skip class).

f. The fact that {solar power is very expensive} is one reason why [solar power, by itself, is no solution to our energy problems]. Another reason is that (solar power is not reliable).

There are several devices that will help in identifying the structure of premise and conclusion: Ask, what is the basic point the author wishes to convey? Of all the claims in the structure, which one is the most important in terms of what the author finally wants you to do or believe?

The answer will usually be the conclusion. Because it is the main point, conclusions frequently appear at the beginning or near the beginning of an argument. The other place to look is at the very end. Conclusions are frequently preceded by indicator words such as: *Therefore, Thus, So, We may conclude that, It follows that, Points to the conclusion that, Shows that, Proves that, As a result, It is clear that, Demonstrates,*

The premises are often indicated by such words as*; since, because, for the reason that, based upon, evidenced by, indicated by, proved by.*

The problem is that we rarely encounter such clear-cut examples in daily readings. Here is an example from part of an editorial of June 13, 2017.

The bottom line is these agreements do drive up costs. At a recent SRJC board meeting, the builder of the Lawrence A. Bertolini Student Center—a $35 million project paid for through a 2002 bond measure—told board members that the costs of his project would have been 2.5 million higher if a project agreement was in place.

There is a charitable way to help the editorial writer make this into an argument structure.

Bertolini Center project was not under a PLA . Had it been, the costs would have been 2.5 million more. And since the Bertolini Center project is like all other non PLA projects and the higher assumed costs are solely due to the PLA factor, it follows that these agreements do drive up costs.

Our charity does not mean this above is a good argument; it only means we are trying to see a structure. We will come back to the entire argument when we evaluate arguments.

But here is what it might look like if we were to diagram this argument

 Assumptions: the Bertolini Center project is like all other non PLA projects and the higher assumed costs are solely due to the PLA factor

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Bertolini Center project was not under a PLA and , the costs would have been 2.5 million more.

Conclusion: PLA drives up costs

1. Watson-Glaser Critical Thinking Appraisal [↑](#footnote-ref-1)
2. Dressel and Mayhew [↑](#footnote-ref-2)