Introduction to Logical Reasoning
What is an Argument?

David Emmanuel Gray

Northwestern University in Qatar
Carnegie Mellon University in Qatar

What is an Argument?

The Structure of Arguments

An argument is a collection of statements that are connected in a certain way. In particular, statements in an argument are linked together by inferences.

An **inference** affirms one statement on the basis of one or more other supporting statements. These supporting statements provide the *reasons* or *evidence* for believing the statement being affirmed.

The Structure of Arguments

Logic is hard because it involves a lot of symbols.

Why is this an argument?

What is the statement being defended?

What reason is offered to defend that statement?

The Structure of Arguments

Logic is hard **because** it involves a lot of symbols.

This involves two simple positive statements:

1. Logic is hard, and

2. Logic involves a lot of symbols.

The word "because" indicates that the second statement is supposed to provide a *reason* or *evidence* for us to believe that the first statement is true.

The Structure of Arguments

Logic is hard **because** it involves a lot of symbols.

Do *not* treat this argument like a single proposition. There are independent claims in this sentence that are connected by connected by an *inference* ("because"); they are not connected in a way that is *hypothetical* ("if … then …"), *conjunctive* ("and"), or *disjunctive* ("or") in nature. Arguments and hypothetical statements are different things.

The Structure of Arguments

Premise: A statement in an argument that is used to support another statement; it is the basis on which an inference is made.

Conclusion: A statement in an argument that the other statements support; it is the statement being affirmed by an inference.

Indicator Words

Common Premise Indicators

because	in view of the fact	assuming that
since	given that	for the reason that
for	seeing that	inasmuch as
as	due to the fact that	as indicated by
follows from	being that	the reason being

Common Conclusion Indicators

therefore	which implies that	it must be that
thus	consequently	as a result
hence	it follows that	which means that
so	we can conclude that	ergo

Parsing an Argument

Logic is hard because it involves a lot of symbols.

The conclusion indicator "because" helps us to understand which statement is the premise and which statement is the conclusion in this argument.

We can then parse this argument as follows:

Logic is hard because it involves a lot of symbols.
C   PI   1

Parsing an Argument
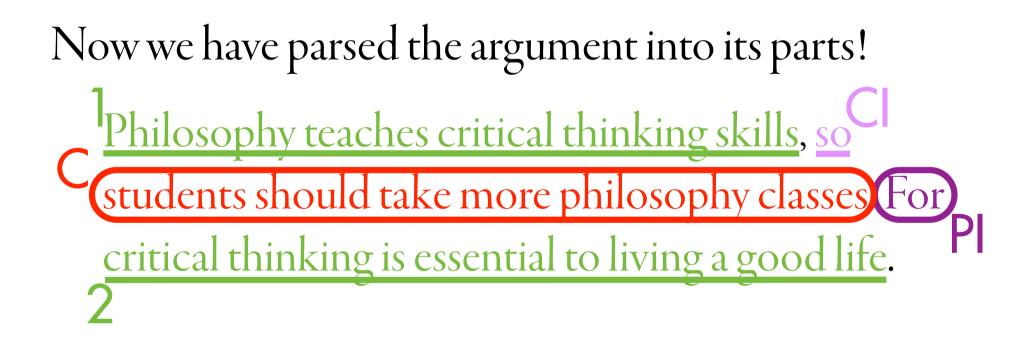
Consider the following argument:

Philosophy teaches critical thinking skills, so students should take more philosophy classes. For critical thinking is essential to living a good life.

Parsing an Argument

First, identify any indicator words:

Philosophy teaches critical thinking skills, so **Cl** students should take more philosophy classes. For **Pl** critical thinking is essential to living a good life.

Second, try to identify the conclusion:

Philosophy teaches critical thinking skills, so CI

C students should take more philosophy classes For PI

critical thinking is essential to living a good life.

Third, find the premises supporting that conclusion:

¹Philosophy teaches critical thinking skills, so ᶜˡ ᶜstudents should take more philosophy classes For ᴾˡ ²critical thinking is essential to living a good life.

Now we have parsed the argument into its parts!

1 Philosophy teaches critical thinking skills, so CI

C students should take more philosophy classes For PI

critical thinking is essential to living a good life.
2

What is an Argument?

An **argument** is a collection of statements about which the claim is made that the truth of all the premises entails the truth of the conclusion.

So an argument asserts that the conclusion can be inferred from the premises. That is, the claim is that *if* the premises are true, then the conclusion *must* be true as well.

Next Class…

We will look more closely at how parse an argument when the statements involved are compound, while not being distracted by material that is not essential to the argument's core premises and conclusion.