

# Introduction to Logical Reasoning

Lecture #3

*What is an Argument?*

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# The Structure of Arguments

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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** asserts the truth of 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

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Consider the following sentence:

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

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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

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

Do *not* treat this argument like a single proposition. There are *two* independent claims in this sentence that are connected by an inference (“because”); they are not connected in a way that is hypothetical (“if... then...”), conjunctive (“and”), or disjunctive (“or”).

**Remember this**—A statement is not an argument!

# The Structure of Arguments

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

**Main Conclusion:** The statement in an argument that is supported by the premises; it is the one statement that is ultimately affirmed by all of the argument's inference(s).

# Inference Indicator Words

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## 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

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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

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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

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First, identify any indicator words:

Philosophy teaches critical thinking skills, <sup>CI</sup>so students should take more philosophy classes. For critical thinking is essential to living a good life. <sub>PI</sub>

# Parsing an Argument

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Second, try to identify the main conclusion:

Philosophy teaches critical thinking skills, <sup>CI</sup>so <sup>C</sup>students should  
take more philosophy classes. For critical thinking is essential to  
living a good life. <sub>PI</sub>

# Parsing an Argument

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Third, identify the premises supporting that conclusion:

1 Philosophy teaches critical thinking skills, <sup>CI</sup>so <sup>C</sup>students should  
take more philosophy classes. <sup>PI</sup>For <sup>2</sup>critical thinking is essential to  
living a good life.

# Parsing an Argument

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Now we have parsed the argument, revealing its logical structure!

<sup>1</sup> Philosophy teaches critical thinking skills, <sup>CI</sup> so <sup>C</sup> students should  
take more philosophy classes. <sup>PI</sup> For <sup>2</sup> critical thinking is essential to  
living a good life.

# What is an Argument?

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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...

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

Also, please do not forget to turn in your response to the Lecture #3 Questionnaire on your way out.