

1.1 & 1.2 – Arguments

1. Arguments: In this class, we will primarily be concerned with arguments. By “arguing,” I do not mean the sort where two people yell and throw things at each other. I mean this:

Argument: An argument is a collection of sentences that attempt to establish that some conclusion is true.

The first sentences are called “**premises**” (usually, there are two of these), while the last sentence is called the “**conclusion**”. The premises should be the things that support the conclusion; that is, they are the *reasons* given for why we should accept the conclusion.

For example:

1. If something grows from the ground and contains seeds, then it is a fruit (not a vegetable).
2. Tomatoes grow from the ground and contain seeds.
3. Therefore, tomatoes are fruits (not vegetables).

In this example, the first two sentences are the premises. The third sentence is the conclusion. We conclude that tomatoes are fruits *because of* the assertions made in the two premises.

But, let’s back up a little bit.

Note that the premises and the conclusion of any argument must be “**statements**”:

Statement: A statement is a sentence that could be true or false.

Here are some examples of sentences that are NOT statements:

- “Shut the door!”
- “Yee-haw!”
- “Why am I so bored right now?”

These are not statements, because they are neither true nor false. So, none of these sentences can be the premises or the conclusion of an argument.

Also, most arguments you come across in life will not be so neatly packaged into orderly, numbered sentences like the argument about tomatoes above. You'll have to dig them out of the conversation, or the article you're reading. For instance:

"Fluffy the bunny has fur, and since I learned that anything that has fur is a mammal, it follows that Fluffy is a mammal."

This is an argument. But, what are the premises, and what is the conclusion? Luckily, most premises and conclusions have certain keywords associated with them. Here are some of those keywords:

Conclusion Keywords

therefore
thus
consequently
it follows that
accordingly

Premise Keywords

since
given that
because
for
seeing as how

See your textbook for more examples. The point is that these keywords often help us to identify premises and conclusions. When we look at the argument about Fluffy the bunny, we can quickly spot "it follows that" (a conclusion keyword), and "since" (a premise keyword). So, we know the following:

Premise: Anything that has fur is a mammal.

Conclusion: Fluffy the bunny is a mammal.

But, there's another bit still unaccounted for: "Fluffy the bunny has fur." Is this a premise or what? It turns out to be a premise, because it is one of the statements that support the conclusion. So beware! Not ALL premises and conclusions will have keywords connected to them. We may now write down the full argument:

1. Fluffy the bunny has fur
2. Anything that has fur is a mammal.
3. Therefore, Fluffy the bunny is a mammal.

Note: Do Homework for section 1.1 at this time.

2. When is something NOT an argument? A lot of the time, in conversations and news articles, etc., the speaker/writer is NOT giving an argument. So, we need to be capable of figuring out when someone is presenting an argument, and when they are not. A crucial feature of any argument is that it have the following two features:

Two Central Features of Arguments

- (1) It is trying to CONVINCEN us of something, or PROVE something to us. The thing being proved is called the "conclusion."
- (2) It supplies some EVIDENCE in order to SUPPORT that conclusion.

Often, people are just stating their opinions, or offering advice, or just listing some facts—they are not providing arguments. For instance, these are NOT arguments:

- (#1) "Fluffy's fur is really soft. She is quiet too. And she never bites."
- (#2) "Tomatoes have seeds. I heard once that all tomatoes are fruits. That seems weird to me. I always thought they were vegetables."
- (#3) "Bunnies are awful creatures. They stink, and they are not very smart."
- (#4) "Tomatoes are good, but they're even better when we turn them into ketchup. Ketchup is amazing. I put it on almost everything."

These passages are all making some claim or other, but they are not ARGUMENTS. This is because none of these passages are trying to CONVINCEN us of something. Now, sometimes, something that is NOT an argument can sort of SEEM like one. For instance, consider passage #3 above (about bunnies). This COULD be turned into an argument. Something like:

1. Bunnies stink.
2. Bunnies are not very smart.
3. All creatures that stink and are not very smart are awful creatures.
4. Therefore, bunnies are awful creatures.

What really matters is whether or not the fact that bunnies stink and are not very smart are being supplied as the REASONS which are provided in order to CONVINCEN us that bunnies are awful creatures. Sometimes it is hard to determine this. Sometimes we can only tell whether or not something is an argument by its CONTEXT in a conversation—for instance, if your roommate was trying to persuade you *not to buy* a pet bunny, then passage #3 might be interpreted as an argument because of the context under which it was presented to you (namely, to PERSUADE you not to buy a bunny).

3. Most commonly mistaken for arguments: Explanations: When trying to figure out whether something is an argument or not, the most confusing sort of claims are explanations. This is because explanations often use argument keywords like “because” in them.

Wait... I just used the word “because.” So, was I just giving an argument? Or, rather, was I just providing an explanation?

Argument or Explanation? “Explanations are often confused with arguments because they use several of the same keywords that arguments do.”

Answer: Explanation! This is just EXPLAINING something. The passage above is merely explaining WHY explanations are so confusing. The passage is not trying to CONVINCEN you that explanations are confusing. The fact that “explanations use several of the same keywords that arguments do” is merely trying to help you UNDERSTAND better—not change your mind.

Here’s the primary difference between explanations and arguments:

- Explanation: TELLS you WHY something is the case.
- Argument: PROVES to you THAT something is the case.

4. Conditional statements are not arguments: Conditional statements are also sometimes mistaken for arguments—but they are NOT arguments.

Conditional Statement: A statement of the form “if ... then ...” The IF part of the statement is called the **antecedent**, while the THEN part of the claim is called the **consequent**.

Here are some examples of conditional statements:

- “If that has nuts in it, then I should not eat it.”
- “If it is snowing, then class is cancelled.”

While it might SEEM like the antecedent is a premise, and the consequent is a conclusion, this is not the case. Remember that arguments supply premises that ARE the case in order to prove some conclusion. Conditional statements, on the other hand, supply antecedents that MIGHT be the case, and then claim that IF that turns out to be true, then the consequent will also be true.

Note that conditional statements can be a PART of an argument. For instance:

1. If it is snowing, then class is cancelled.
2. It IS snowing.
3. Therefore, class is cancelled.

5. Necessary and Sufficient Conditions: Conditional statements can help us to identify necessary and sufficient conditions. These are defined as follows:

Sufficient Condition: A is a sufficient condition of B whenever A is all that is needed in order for B to occur, or be true, etc.

Necessary Condition: A is a necessary condition for B whenever B CANNOT occur, or be true, etc., without A also occurring, or being true, etc.

To illustrate, consider the difference between:

- "If Fido is a dog, then Fido is a mammal."
- "If Fido is not a mammal, then Fido is not a dog."

The first statement expresses a **sufficient condition**: Being a dog GUARANTEES being a mammal, so we say that being a dog is a "sufficient condition" for being a mammal.

The second statement expresses a **necessary condition**: Something MUST be a mammal in order to be a dog, so we say that being a mammal is a "necessary condition" for being a dog.

To better understand, consider what happens when we swap the antecedent with the consequent to get the following statements, which are FALSE:

- "If Fido is a mammal, then Fido is a dog."
- "If Fido is not a dog, then Fido is not a mammal."

Both of these statements are false. The first one is false because being a mammal is NOT sufficient for being a dog. The second one is false because it is NOT necessary that something be a dog in order to be a mammal. To see how both of these could be false, imagine that Fido is the name of my cat (and cats are mammals).

Note: Do homework for section 1.2 at this time.