Arguments

1. Arguments: In this class, we will 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.

Arguments have the following two features:

**Two Central Features of Arguments**
(1) It is trying to **CONVINCE** us of something, or **PROVE** something to us.
(2) It supplies some **EVIDENCE** in order to **SUPPORT** the thing being proved.

The claim that is being proved is called that “**conclusion,**” and claims which provide the evidence to support that conclusion are called the “**premises.**” They are the **reasons** given for why we should accept the conclusion.

2. On Statements: The premises and conclusion of arguments 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 did I enroll in this class?”

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.

3. An Example: Now let’s look at an example of an argument. A detective says:

   1. The thief had blonde hair and brown eyes (based on witnesses & video footage).
   2. Perry does not have blonde hair and brown eyes.
   3. Therefore, Perry is not the thief.

In this example, the first two sentences are the premises. The third sentence is the conclusion. The speaker is presenting points (1) and (2) as bits of **EVIDENCE,** or as **REASONS** for why you should believe the conclusion (3) that Perry is not the killer.
4. Validity and Soundness: Any successful argument must have two features: It must be both valid and sound. What do these words mean?

Validity: An argument is valid when, IF all of it’s premises were true, then the conclusion would also HAVE to be true.

In other words, a “valid” argument is one where the conclusion necessarily follows from the premises. It is IMPOSSIBLE for the conclusion to be false if the premises are true. The argument above about Perry is valid.

Note: Why? Because, IF (1) and (2) WERE true, then (3) would also HAVE to be true.

So, an argument is valid if it has the proper form. An argument can have the right form, but be completely and obviously false. For example:

1. Chad is a duck.
2. All ducks are rabbits.
3. Therefore, Chad is a rabbit.

Though premise 2 and the conclusion are both false, this argument is valid. Why? Because, IF the premises WERE true, then the conclusion would also HAVE to be true. The conclusion necessarily follows from the premises. This is all that validity requires.

Note: Validity says nothing about whether or not any of the premises ARE true. It only says that IF they are true, then the conclusion must follow. So, validity is more about the FORM of an argument, rather than the TRUTH of an argument. Lande drives this point home nicely in the following passage:

Here’s how to think about validity. Suppose—just suppose—that you just now popped into existence. An instant ago you didn’t exist, and then poof!—here you are; you just popped in! You’re endowed with the ability to think logically and you’re endowed with a perfect command of the English language, but—and here’s what’s crucial—you know nothing about the world. You’re in possession of no empirical facts. You don’t know who the president of the United States is, and for that matter, you don’t even know what the United States is (or are). In short, you know diddly-squat about diddly-squat. And then a stranger (of course a stranger—you just popped into existence) sidles up to you and tries to strike up a conversation. “Hello, Friend,” he says. “I have a question for you.” You ears perk up. You’re interested. You should be: it’s your-first-ever conversation. The stranger continues, and you find yourself listening to your first-ever argument. “All logicians are magicians, and Coco is a logician—so Coco is a magician. Right?”

You know just what to reply. “See here,” you say, “I haven’t the faintest idea whether all logicians are magicians. Moreover I haven’t the faintest idea whether Coco is a logician. But if it really were true that all logicians are magicians, and if it also really were true that Coco is a logician, then of course it would follow that Coco is a magician.” And
So, a valid argument need not have true premises or a true conclusion. On the other hand, a **sound** argument DOES need to have true premises and a true conclusion:

**Soundness:** An argument is sound if it meets these two criteria: (1) It is valid. (2) Its premises are true.

In other words, a sound argument has the right *form AND it is true.*

*Note:* A sound argument will always have a true conclusion. This follows every time these 2 criteria for soundness are met. Do you see why? Answer: First, recall that a sound argument is both valid AND has true premises. Now, refer back to the definition of “valid”. For all valid arguments, if their premises are true, then the conclusion MUST also be true. So, all sound arguments have true conclusions.

Looking back to our argument about ducks and rabbits, we can see that it is **valid**, but not **sound**. It is not sound because it does not have all true premises. In fact, NEITHER of its premises are true.

So, the argument about Chad, ducks, and rabbits is valid, but NOT sound.

What about the argument about Perry not being the thief? Well, we don’t know! The argument is valid, but we will not know if it is sound unless we verify the truth of the premises. DOES the thief have blonde hair and brown eyes? Is it TRUE that Perry does NOT have blonde hair and brown eyes? We will not be able to determine whether or not the argument is sound until we answer these questions.

Here’s an example of an argument that is obviously valid AND sound:

1. Williamsburg is in Virginia.
2. Virginia is in the United States.
3. Therefore, Williamsburg is in the United States.

In this argument, if the premises are true, then the conclusion is necessarily true (so it is valid). AND, as it turns out, the premises ARE true (Williamsburg IS in Virginia, and Virginia IS in the U.S.)—so the conclusion must also be true (so the argument is sound).

**5. Deduction vs. Induction:** Arguments come in two varieties: **Deductive** and **Inductive.** A deductive argument, if successful, GUARANTEES that its conclusion is true. An inductive argument, at best, only guarantees that its conclusion is PROBABLY true.
Here is an example of an inductive argument:

1. In the past, most students have had to study really hard to pass logic.
2. Therefore, you will have to study really hard to pass logic.

Notice that claim 1 does not GUARANTEE that claim 2 is true. Maybe you’re one of the exceptions who somehow passes courses without ever studying. But, claim 1 does make the truth of claim 2 more PROBABLE.

We won’t be concerned with induction in this course. We will only be concerned with arguments whose premises, if true, guarantee 100% that their conclusion is true.

6. The Power of Arguments: We have looked at only “boring” arguments so far. But, arguments are powerful tools that can be used to prove very exciting and remarkable things. For instance:

If there were a child drowning in front of me, and I just watched him drown, this is clearly morally wrong (right?). But, then, consider this argument raised by famous philosopher, Peter Singer:

1. It is morally wrong to fail to save a drowning child.
2. But, not saving a drowning child is morally equivalent to not saving a starving child (i.e., by not donating to famine relief).
3. Therefore, it is morally wrong to not donate to famine relief.

Or consider: Murder seems wrong because it takes away every good thing that the person will ever get to experience in their future. But, Don Marquis proposed:

1. It is morally wrong to deprive an individual of future happiness.
2. But, abortion deprives a fetus of future happiness.
3. Therefore, abortion is morally wrong.

Whether you agree with the premises of these arguments or not is not my point here. My point is that arguments can be used to prove (or attempt to prove) very remarkable things. Imagine: If Singer is right, then you are a terrible person if you have not donated money to save the lives of starving children. And if Marquis is right, then abortion is as wrong as murder! Part of the goal of this course will be to help you to analyze and assess arguments such as these, and to help you to generate careful, successful arguments of your own.