CRITICAL THINKING: THE VERY BASICS - NARRATION
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Critical Thinking

Hello and welcome to “Critical Thinking, the Very Basics, at least as I see them.”

What You’ll Learn Here

In this presentation, you’ll learn how to recognize arguments.

You’ll learn how to analyze arguments by recognizing the ultimate conclusion, determining which other ideas are important, and seeing how these other ideas work together to support the ultimate conclusion.

You’ll learn how to evaluate arguments by appreciating the structure of an argument, evaluating the premises, evaluating the inferences, and assessing the argument as a whole.

And finally, you’ll learn how to construct arguments by deciding upon your ultimate conclusion, constructing your chain of reasoning, and communicating your argument to others.

The Nature of Basics

Before we begin, let’s talk a bit about the nature of basics in any field, not just critical thinking. The basics are a few, relatively simple skills that are sometimes, and mistakenly, unappreciated. This is a shame because the basics are the building blocks for any more advanced activity, and they admit of endlessly sophisticated applications. I never get tired of thinking about the basics.

The Four Big Steps

The basics of critical thinking involve four big steps, each of which has various sub-steps. First, we want to be able to recognize arguments when we’re faced with them.
Second, we want to be able to analyze the arguments we face, breaking them down into their parts to understand how they work.

Third, we want to be able to evaluate the arguments we’ve analyzed.

And finally we want to be able to construct good arguments of our own.

It is very important that we analyze an argument before we evaluate it because a premature evaluation of an argument will contaminate our attempts to understand it and if we misunderstand an argument our assessment of the reasoning is likely to be off-target. These misunderstandings and inaccurate evaluations are especially likely to happen when the argument concerns a subject about which we have strong opinions, so in such cases we need to be particularly careful to bracket our preconceptions and opinions until after we’ve analyzed the argument as completely as we can.

At this point, you may choose to explore argument recognition, analysis, evaluation, or construction by clicking on the appropriate button. I’ll give you a few seconds to make your selection. If you don’t select one of these topics, this presentation will continue with an examination of argument recognition.

**Recognizing Arguments**

An argument is a unit of reasoning that attempts to prove that a certain idea is true by citing other ideas as evidence.

The essential feature of an argument is that it tries to rationally persuade its audience of something, so if we’re faced with a passage that’s trying to get us to believe something by making a case for its truth rather than by simply asserting it, we’re dealing with an argument.

**First Example**

For example, let’s consider this passage: “Critical thinking is taught at many colleges and universities. Courses devoted to critical thinking are often offered by philosophy departments, but critical thinking skills are taught in every subject, from art to zoology.” Is this passage trying to get us to believe something by making a case for its truth rather than by simply asserting it?
I don’t think so, so this passage doesn’t contain an argument.

**Second Example**

Now let’s consider the passage, “Critical thinking helps people to reason more easily and effectively and prevents them from being easily taken in by shoddy arguments. These skills are essential to a happy and productive life, so everyone should study critical thinking.” Is this passage trying to get us to believe something by making a case for its truth rather than by simply asserting it?

Yes. It’s trying to get us to believe that everyone should study critical thinking, so this passage does contain an argument.

**Where Next?**

At this point, you may choose to replay this brief discussion of argument recognition, to explore argument analysis, to look at argument evaluation, or to learn about argument construction. You may also elect to terminate the lesson for now. Simply click on the appropriate button. I’ll give you a few seconds to make your selection. If you don’t select one of these topics, this presentation will continue with an examination of argument analysis.

**Analyzing Arguments**

Once we recognize that we have an argument, we can analyze it. There are three basic steps to analyzing an argument. First, we identify the argument’s ultimate conclusion.

Then we determine which other ideas in the argument are important.

And finally we determine how these other important ideas work together to support the ultimate conclusion.

1. **Identify the Ultimate Conclusion**

The ultimate conclusion of an argument is simply the main idea that the argument is trying to get us to believe. Most of the time, the ultimate conclusion appears
prominently in the argument. Sometimes, however, it can be unstated, so we should aware that we might need to fill it in on our own.

2. Determine What Other Ideas are Important

Once we’ve identified the ultimate conclusion of an argument, we can determine what other ideas are important. For our purposes, an idea is important if it helps the argument to establish the truth of the ultimate conclusion. Because people often say and write things for rhetorical effect, it’s to be expected that some sentences in a passage that contains an argument won’t convey important ideas.

3. See How These Other Ideas Work Together to Support the Ultimate Conclusion

After we know what ideas are important, we can determine how they work together to support the ultimate conclusion. There are four basic patterns that govern how ideas can cooperate with each other in this way, and all arguments are composed of combinations of these basic patterns.

i. Premise / Ultimate Conclusion

The structurally simplest pattern of cooperation is that of one premise supporting the ultimate conclusion.

The ultimate conclusion, remember, is the main idea that the argument is trying to prove.

The premise is an idea that the argument assumes to be true without support, or without providing us with any reason to believe it. (After, all, every argument has to start somewhere)

The connection between the premise and the ultimate conclusion is called the inference. In general, when an argument is presented like this, the inference is the connection that holds between the ideas at the top of the arrow and the idea at the bottom of the arrow when the truth of the ideas at the top is supposed to establish the truth of the idea at the bottom. In a passage, inferences are often, but not always, indicated by words like “therefore” and “because.” We’ll talk more about inferences later.
What we have here, with the premise on top, the ultimate conclusion on the bottom, and the inference represented as an arrow running between them, is the diagram of an argument. The diagram of an argument allows us to see the argument's structure very clearly and this enables us to comprehend the argument more deeply and evaluate it more easily.

For example

For example, let's consider the argument in this passage: "What's your opinion of critical thinking? Critical thinking helps us to understand how other people think. Therefore, critical thinking is important."

The ultimate conclusion here is "Critical thinking is important" because that's the idea that this argument is trying to get us to believe.

The sentence "What's your opinion of critical thinking?" doesn't help to establish that critical thinking is important, so we can ignore it.

The premise is "Critical thinking helps us to understand how other people think," because that's the idea that the argument is taking for granted.

And the inference is signaled by the word "therefore." "Therefore" is an inference indicator expression because it shows us where an inference is located. And since "therefore" acts like a sign that says, "the next idea is a conclusion that follows from a previous idea" we call it a "conclusion indicator expression." In this case, the "therefore" shows us that "Critical thinking is important" is a conclusion following from "Critical thinking helps us to understand how other people think."

ii. Subconclusions

The second basic pattern of cooperation shows that there can be intermediate ideas between the premise and the ultimate conclusion.

Perhaps, for instance, an argument gives us an ultimate conclusion that is supposed to following from another idea.

And perhaps that idea, in turn, is supposed to follow from yet another idea.
In this case, the ultimate conclusion is still at the bottom,

the premise is still at the top,

and the idea in the middle is called a “subconclusion.” A subconclusion is an intermediate idea on the way from the premises to the ultimate conclusion. Subconclusions both follow from other ideas (which is why they’re conclusions and not premises) and go on serve as evidence for other ideas (which is why they’re subconclusions and not the ultimate conclusion).

For example

For example, let’s consider the argument in this passage: “What’s your opinion of critical thinking? Look at it this way. Critical thinking helps us to understand the arguments that other people give. Thus, critical thinking helps us to understand how other people think. Therefore critical thinking is important.”

The ultimate conclusion is still “Critical thinking is important.”

Neither “What’s your opinion of critical thinking?” nor “Look at it this way,” help to establish that critical thinking is important, so we’ll ignore these sentences.

“Critical thinking helps us to understand the arguments that other people give,” on the other hand, is important,

and the conclusion indicator expression “thus” helps us to see that it’s a reason to believe “Critical thinking helps us to understand how other people think.”

Finally, the conclusion indicator expression “therefore” tells us that ”Critical thinking helps us to understand how other people think” is given as a reason to believe the ultimate conclusion that critical thinking is important.

iii. Dependent Reasons

The third basic pattern of cooperation notes that sometimes two or more ideas need to work together in order to establish the truth of another idea. We call ideas that need to work together in this way “dependent reasons.” In this diagram, for instance, neither idea at the top of the arrow can support the conclusion alone,
but together they can support the conclusion. These two ideas need to be believed simultaneously. The fact that each idea needs to work with the other in order to prove the conclusion is represented by the plus sign between them.

**For example**

For example, let's look at the argument in this passage: “Critical thinking helps us to understand how we think because in the process of assessing arguments, we clarify our own basic assumptions and clarifying our own basic assumptions helps us to understand how we think. I really enjoy teaching and studying critical thinking.”

The ultimate conclusion is “Critical thinking helps us to understand how we think,” and the reasons that are given to believe this conclusion are the ideas “in the process of assessing arguments, we clarify our own basic assumptions,” and “clarifying our own basic assumptions helps us to understand how we think,” taken together. Note that if we believe the first premise but not the second premise, we won’t have good reason to believe the ultimate conclusion. Similarly, if we believe the second premise but not the first premise, we won’t have good reason to believe the ultimate conclusion. However if we believe both premises at the same time, we’ll have a much better reason to believe the ultimate conclusion. These premises need to work together. That’s why they’re added.

Note also that the inference is signaled by the word “because.” “Because,” like “therefore,” is an inference indicator expression. Unlike “therefore,” however, “because” doesn’t act like a sign that says “the next idea is a conclusion that follows from a previous idea.” Instead, it acts like a sign that says “the next idea is being given as a reason for some other idea.” We’ll call “because,” and similar inference indicator expressions, “reason indicators.”

Finally, note that the sentence, “I really enjoy teaching and studying critical thinking,” doesn’t advance the argument. It doesn’t give us reason to believe the ultimate conclusion, so we’ll ignore it.

**iv. Independent Reasons**

At last, we come to the fourth and final basic pattern of cooperation, the pattern in which two or more reasons are each able to support a conclusion on its own. We
call reasons that are able to function on their own like this “independent reasons.” In this diagram, for instance, one idea can establish the conclusion on its own and so can another.

Note that each independent reason gets its own inference arrow because each is supplying its own line of reasoning to the conclusion. Indeed, independent reasons give us independent lines of reasoning like this.

For example

To see how this works, let’s consider this argument: “Critical thinking is important since it helps us to understand how other people think. It's also important because it helps us to understand how we think.”

The ultimate conclusion here is “Critical Thinking is important.” And we have two independent reasons to believe this.

First we’re told that critical thinking is important because it helps us to understand how other people think. Can you see how that inference is signaled by the reason indicator expression “since?”

Second, we’re told that critical thinking is important because it helps us to understand how we think. This inference is signaled by the reason indicator expression “because.” Each of these reasons, taken on its own, gives us reason to think that critical thinking is important so they’re independent reasons, each with its own inference arrow.

Combinations of the Four Basic Patterns

So that’s it for the four basic patterns. Most arguments are more structurally complex than the examples we’ve seen, but even the most complex arguments are composed of combinations of the four basic patterns.

For example, let’s consider the argument in the following passage: “What’s your opinion of critical thinking? Look at it this way. Critical thinking helps us to understand how other people think because it helps us to understand the arguments that other people give. Hence critical thinking is important. In addition, in the process of assessing arguments, we clarify our own basic assumptions, and
clarifying our own basic assumptions helps us to understand how we think, so critical thinking helps us to understand how we think. I really enjoy teaching and studying critical thinking."

The ultimate conclusion is “Critical thinking is important.”

“What's your opinion of critical thinking?” “Look at it this way,” and “I really enjoy teaching and studying critical thinking,” can all be ignored because they don't help to establish that critical thinking is important.

And the expressions, “hence,” “so,” and "because," indicate where some of the inferences are.

**Combinations of the Four Basic Patterns**

This argument is composed of the four smaller example arguments that we've previously diagrammed, so the diagram for this argument is nothing but an assemblage of the diagrams we've done. The argument gives us two lines of reasoning to support the ultimate conclusion that “Critical thinking is important.”

First, we're told that critical thinking helps us to understand how other people think and the reason we've given to believe that claim is the premise that critical thinking helps us to understand the arguments that other people give.

Second, we're told that critical thinking helps us to understand how we think and this idea is supported by the two dependent premises that assessing arguments enables us clarify our own basic assumptions and that this, in turn, helps us to understand how we think.

Analyzing arguments is nothing more than what we've seen done. First we identify the ultimate conclusion; then we decide what other ideas are important, and finally we determine how all of these ideas work together. Of course this can be a tricky job and some arguments are harder to analyze than others, but with practice you can get pretty good at.

**Where Next?**
At this point, you may choose to return to the discussion of argument recognition, to replay this examination of argument analysis, to continue with argument evaluation, or to jump to argument construction. You may also elect to terminate the lesson for now. Simply click on the appropriate button. I'll give you a few seconds to make your selection. If you don't select one of these topics, this presentation will continue with an examination of argument evaluation.

III. Evaluating Arguments

When (and only when) we've analyzed an argument, we can proceed to evaluate it, if we want. Basically, a good argument establishes the truth of its ultimate conclusion and gives its audience good reason to think that the ultimate conclusion is true, while a bad argument either doesn't establish the truth of its ultimate conclusion or else doesn't give its audience good reason to think that the ultimate conclusion is true. Although it might seem strange at first, proving that the ultimate conclusion is true and giving the audience good reason to think that the ultimate conclusion is true are actually two different things. For example, an argument can prove that the ultimate conclusion is true without convincing its audience that the ultimate conclusion is true if it has true premises that the audience doesn't believe. Conversely, an argument can convince its audience that the ultimate conclusion is true without proving that the ultimate conclusion is true if the audience believes the premises even though they're false.

III. Evaluating Arguments

In order to evaluate an argument we first appreciate the general structure of the argument, noting whether or not it has independent reasons, for example. Then we evaluate the premises, evaluate the inferences, and assess the argument as a whole in light of what we know about its structure, premises, and inferences. We'll discuss each of these components of argument evaluation.

1. Appreciate the Structure of the Argument

When we look at the overall structure of the argument, we should notice how many lines of reasoning support the ultimate conclusion, or in other words, how many “independent paths” there are from the premises to the ultimate conclusion. A good argument must have at least one good line of reasoning and a good line of
reasoning must have all good premises and all good inferences. This is much easier to understand once we see some arguments.

For example

For example, in this very basic argument there is only one line of reasoning supporting the ultimate conclusion. Because the premise is bad, the argument is bad no matter how good the inference is. If the premise is false, for example, it can't prove that the ultimate conclusion is true.

Similarly, if the inference is bad in an argument like this then the argument as a whole is bad no matter how good the premise might be. This is because if the inference is bad then the conclusion could easily be false even if the premise is true. The connection between the premise and the conclusion isn't strong enough.

The only way that this argument can be good is for the premise and the inference to both be good. This is true quite generally in arguments with only one line of reasoning.

For instance, the same principle applies if the argument has dependent reasons. If even one of the premises is bad then the argument as a whole is bad no matter how good the inference is. This is because such an argument needs both premises to be true simultaneously in order to establish the conclusion.

And if the inference is bad then the argument is bad no matter how good the premises are. This is because the bad inference means that the premises - no matter how good they are - simply can't prove that the conclusion is true. The connection that they have to the conclusion is too weak.

This argument is good only if both of premises and the inference are good. So you see how in arguments like the ones we've discussed so far, arguments with only one line of reasoning, even one bad premise or one bad inference spoils the argument.

Things are different if the argument has more than one line of reasoning. In this argument, for example, there are two lines of reasoning. The first line fails because it has a bad premise. The second line fails because it has a bad inference.
Since these are the only lines of reasoning there are, the ultimate conclusion is left without any strong avenue of support and so the argument is bad.

However, in this argument the first line of reasoning fails because it has a bad premise while the second line succeeds because its premises and inferences are all good. This means that the ultimate conclusion does have a strong avenue of support - the second line of reasoning - and so the argument is good despite the bad first line of reasoning. Of course, so far we've been talking about whether an argument would be good or bad given a prior assessment of its premises and inferences. How do we go about making this assessment? We'll look at assessing premises now and turn to assessing inferences later.

2. Evaluate the Premises

There are basically three questions that we should ask when evaluating an argument's premises.

First, we should ask, "Is this premise true?" because if a premise is false then it can't prove that the ultimate conclusion is true and because proving the ultimate conclusion to be true is one of the things that a good argument should do. When deciding whether or not a premise is true, we use our own best judgment, thinking with our own head, even though other people might not always agree with us.

But actual truth is not the only thing. We've seen that a good argument should also give its audience reason to believe that the ultimate conclusion is true, and it can't do this if the audience doesn't believe the premises, so the second question we should ask is, "Would most members of the argument's audience, including people who don't already believe the ultimate conclusion, believe this premise?" It's very important to remember that the argument's audience probably doesn't already believe the ultimate conclusion because if they did already believe the ultimate conclusion then the argument wouldn't need to try to convince them of it. Consequently, when answering this question, we have to view the premise through the eyes of someone who doesn't already the ultimate conclusion, even if we do, in fact, believe it.

And finally, people can sometimes believe a true premise but have absolutely no good reason for doing so. They might, for example, believe the germ theory of disease because they flipped a coin after asking "Is the germ theory of disease
true?” Because premises that are believed for bad reasons can’t provide anyone with good reason to believe something else, we should also ask ourselves whether or not the argument’s audience has good reason to believe the premise (although, in practice, this question is usually a little less important than the other two).

If the answer to one of these questions is “no,” then the premise is bad. But if all of the answers are “yes,” then the premise is good.

For example

For example, let’s consider the following argument for the conclusion that it’s more important that our beliefs be useful than that they be true. The passage goes like this: “Sometimes believing the truth isn’t very useful, but many people think that we should try to believe the truth anyway. Such people maintain that it’s more important to have true beliefs than useful ones. Are these people right? Well, first of all, philosophers think that useful beliefs are more important than true beliefs and anything that most philosophers think must be right. Second, having true beliefs is less important than having useful beliefs. And finally, since we can’t know for certain that our beliefs are true, it’s pointless to even try to believe the truth.”

For example

Here’s the diagram for this argument. As you can see, this argument’s conclusion, “It’s more important that our beliefs be useful than that they be true,” isn’t explicitly stated by the argument but it is, nonetheless, what this argument is trying to get us to believe. And this argument has three lines of reasoning.

The left-most line of reasoning supports the conclusion with the premise that most philosophers think that useful beliefs are more important than true beliefs combined with the premise that anything that most philosophers think must be right. What do you think about these premises?

I think that the first premise is bad because I think it’s false. I doubt it’s the case that most philosophers think that useful beliefs are more important than true beliefs.
And I think that the second premise is bad for the same reason. Regrettably, it’s not the case that anything that most philosophers think is right. The fact that even one of these premises is false, by the way, is enough to show that this particular line of reasoning won’t work, but the argument has two more lines of reasoning, either one of which might save it.

The second line of reasoning employs the premise that having true beliefs is less important than having useful beliefs. Is that so? Maybe, maybe not, but even if it’s true, it’s basically a restatement of the ultimate conclusion.

Only people who already think that it’s more important that our beliefs be useful than that they be true could think that having true beliefs is less important than having useful beliefs. This makes the premise bad. We can say that this premise “assumes the conclusion,” or “begs the question,” and so wouldn’t be acceptable to most members of the argument’s audience. This, of course, is enough to show that the second line of reasoning is bad. But that’s okay. Maybe the third line of reasoning will be good so let’s look at that.

What about the premise that we can’t know for certain that our beliefs are true? Is this the case?

I think so (perhaps barring certain unusual beliefs concerning logical truths or the states of own immediate consciousness). Is this premise acceptable to members of the argument’s audience? In particular, could people who don’t already believe the ultimate conclusion accept this premise?

Again, I think so which makes this premise good!

The right-most line of reasoning is potentially strong so the argument still has a chance of supporting the ultimate conclusion. We just need to look at the inferences.

3. Evaluate the Inferences

An inference, you might remember, is the connection that holds between a reason and the conclusion that’s supposed to follow from it.
To say that an inference is valid is to say that if the reason were true then the conclusion would have to be true as well. Valid inferences are absolutely perfect.

To say that an inference is good is to say that if the reason were true then the conclusion would probably be true as well, although it wouldn’t absolutely have to be.

And to say that an inference is bad is to say that even if reason were true, the conclusion could very easily be false. All of this will make a lot more sense when we look at some actual inferences.

It’s important to realize that assessing an inference between a reason and a conclusion is not the same thing as assessing the reason itself.

**Reasons ≠ Inferences**

The inference can be good even if the reason is false because when we say that the inference is good we’re saying that *if the reason were true* (which it might not actually be) then the conclusion *would be true* (which, again, it might not actually be). Sometimes it can be difficult for people to psychologically detach their assessment of an inference from their assessment of the reason.

**Reasons ≠ Inferences**

Suppose, for example, that we’re evaluating the inference from “Your neighbor is a Martian,” to “Your neighbor is an extraterrestrial.” Some people will say that this is a bad inference on the grounds that their neighbor isn’t an Martian, to which we’d respond, “Probably not, but if she were a Martian then she’d be an extraterrestrial, so the inference is good,” to which this person might answer, “But she isn’t a Martian so the inference is bad.” And this can go on for a long and frustrating time.

**The Bob Method**

In order to avoid this sort of confusion between evaluating a reason and evaluating an inference, I’ve invented something that I call “The Bob Method.”
Bob is a perfectly gullible, but perfectly rational fellow. We suppose that Bob, being gullible, believes whatever reasons happen to be at the top of the inference, and we ask ourselves how likely Bob is to believe the conclusion on this basis.

If Bob is absolutely compelled to believe the conclusion in virtue of believing the reason, then the inference is valid.

If Bob is inclined but not compelled to believe the conclusion in virtue of believing the reason, then the inference is good.

And if Bob isn’t at all inclined to believe the conclusion in virtue of believing the reason, then the inference is bad. Returning to the inference in the argument about the neighbor, the Bob method can effectively decouple an evaluation of the reason from an evaluation of the inference. If someone is inclined to think that this inference is bad because his neighbor is not in fact a Martian, we can simply say “Fine. I know your neighbor isn’t a Martian. You know your neighbor isn’t a Martian. But Bob, being gullible, thinks that your neighbor is Martian. Now how likely is Bob to believe that your neighbor is an extraterrestrial?” Chances are excellent that this person will respond, “Oh of course Bob will believe that my neighbor is an extra-terrestrial, since he believes that my neighbor is a Martian.” And that’s why the inference is good.

In short, the Bob Method helps us to see the world as someone who accepts certain ideas would see it and to evaluate the inferences on those terms.

For example

To see how this works in practice, let’s return to the argument we’ve been evaluating, and let’s focus on the inference in the left-most line of reasoning. We’ve already decided that the premises are false, but Bob will believe them because he believes all premises. Given that Bob accepts that most philosophers think that useful beliefs are more important than true beliefs, and that anything that most philosophers think must be right, how likely is Bob to believe that it’s more important that our belief be useful than that they be true?

In fact, Bob will be forced to believe it, making this inference very strong - actually valid. Of course this valid inference isn’t enough to save this line of reasoning because the premises are bad.
Now let's turn to the second line of reasoning. If Bob thinks that having true beliefs is less important than having useful beliefs, how likely is he to think that it's more important that our beliefs be useful than that they be true?

Once again, Bob would be forced to believe the conclusion if he believes reason and so the inference is very strong. In fact, it's valid. (Remember, the problem with this premise was that it restated the conclusion, and whenever this happens the inference from the premise to the conclusion is bound to be terrific.) Of course, as with the previous line of reasoning, the fact that this inference is good isn't enough to make the line of reasoning good because the premise is bad.

Consequently, if this argument is going to be good then both of the inferences in the right-most line of reasoning have hold up, so let's take a look at them. We'll start with the inference from the subconclusion to the ultimate conclusion. If Bob thinks that it's pointless to even try to believe the truth, how likely is he to think that it's more important that our beliefs be useful than that they be true?

It seems to me that he'd be pretty likely (although maybe not compelled) to think this, making the inference good. After all, if it's pointless to even try to believe the truth then it's not unreasonable to think that utility might be more important. So far, then, so good. If the inference from the premise to the subconclusion is strong, the right hand line of reasoning will be good and the argument as a whole will be good. So what about that inference? If Bob thinks that we can't know for certain that any of our beliefs are true, how likely will he be to think that it's pointless to even try to believe the truth?

Unfortunately, I don't think that he'd be very likely to believe this. Just because we can't be certain that any of our beliefs are true, it doesn't follow that we can't have good reason to think that some of our beliefs are true, or at least more likely to be true than others, so there can still be a point to trying to believe the truth. And because this inference is weak, the last hope for this argument is gone.

Assess the Argument

Once we've evaluated the premises and the inferences in an argument, it's relatively easy to assess the argument as a whole because, as we've already
discussed, we evaluate the argument in light of what we've learned about the argument's structure, premises, and inferences.

After we've evaluated the argument, however, it's important to distinguish between our evaluation of the argument and our evaluation of the ultimate conclusion. In particular, it's essential to remember that if we decide that an argument is bad, we should form no opinion about the ultimate conclusion on that basis. This can be initially counterintuitive. It's easy to think that if we decide that an argument is bad then we should think that the ultimate conclusion is false, but a little reflection shows this to be mistaken. To say that an argument is bad is simply to say that it hasn't proven the ultimate conclusion to be true; and the ultimate conclusion can certainly be true even if a particular argument hasn't proven it to be true. Thus, the most we can say about the ultimate conclusion of a bad argument (if the bad argument is all the information we have) is that the ultimate conclusion hasn't been proven to be true. It may be true. It may be false. We don't know which.

However, deciding that an argument is good does give us some information about the ultimate conclusion. In particular, if we think that an argument is good then we should be inclined to believe the ultimate conclusion on that basis. There are two ways to see this. First, if we think that an argument is good then we must think that it's done a good job proving that the ultimate conclusion is true - because that's one of the things that a good argument does - and this involves thinking that the ultimate conclusion has been proven to be true. Second, if we think that an argument is good then we must think that the premises are true and that the inferences are strong. Thinking that the inferences are strong involves thinking that a rational person who believes the premises would be inclined to believe the ultimate conclusion as well. And since we believe the premises, that rational person is each one of us and we should be inclined to believe the ultimate conclusion.

Of course, we frequently encounter more than one argument on a particular topic. If we're faced with reasonably good arguments for competing positions, we should believe the position supported by the strongest arguments because that's the position most like to be true.

But our assent can and probably should be provisional. It's perfectly okay to change our mind about an ultimate conclusion as we encounter more and better arguments!
Stubbornness is not an intellectual virtue.

For example

So, returning to the argument we’ve been examining, we’ve seen that the first two lines of reasoning fail at their premises and that the third and final line of reasoning fails at its first inference.

Because this argument has no good line of reasoning, the argument as a whole is bad. And what does this tell us about the ultimate conclusion of the argument?

Absolutely nothing. All we’ve learned is that this argument doesn’t give us reason to believe the ultimate conclusion. The ultimate conclusion itself may be true or it may be false. We should form no opinion about the ultimate conclusion on the basis of our evaluation of this argument. Believe it or not, that’s all we really need to know in order to evaluate the arguments we encounter.

Where Next?

At this point, you may choose to go back to the discussion of argument recognition, to return to the examination of argument analysis, to replay this study of argument evaluation, or to continue with argument construction. You may also elect to terminate the lesson for now. Simply click on the appropriate button. I’ll give you a few seconds to make your selection. If you don’t select one of these topics, this presentation will continue with an examination of argument construction.

IV. Constructing Arguments

We frequently want to construct arguments of our own. Because constructing arguments is a creative process, it’s impossible to capture in a list of things to do. Nonetheless, it does help to think of argument construction as being composed of three main steps.

First we’ll decide upon the ultimate conclusion for which we want to argue.

Then we’ll construct a chain of reasoning in support this conclusion.

And finally we’ll communicate this argument to other people.
1. Decide upon the Ultimate Conclusion

The process of deciding upon our ultimate conclusion can itself be broken down into three components.

First, we ask a question, like “For whom should we vote?” or “What is the meaning of life?” It’s really helpful to start with a question because this serves to focus our investigation and allows us the option of reconsidering our question later, if no answer to our question seems satisfactory.

Second, we consider various answers to our question. Possible answers can come from brainstorming, researching, chatting with others - pretty much anywhere.

Third, we research these various answers to our question.

And finally, we formulate the answer that we like the best. This answer will be the ultimate conclusion of our argument. In English courses, this is sometimes called the “thesis statement.”

2. Construct the Chain of Reasoning

Once we have an ultimate conclusion in hand, we’ll spend some time constructing a chain of reasoning for this conclusion by thinking of as many reasons to believe the ultimate conclusion as we can and then diagramming an argument on the basis of these reasons. Maybe some of the reasons will be premises that support other reasons as subconclusions. Maybe some of the reasons will be dependent reasons, added together to support the ultimate conclusion. Maybe some of the reasons will be independent reasons, and so on.

Once we have an initial diagram of our argument, we can evaluate its inferences. If we decide that an inference isn’t as strong as we’d like, we might repair the weak inference by adding a dependent reason that “plugs the gap” between the existing reason and the conclusion.

For example, if we’re looking at the inference between “Logic helps us to avoid believing falsehoods,” and “Logic is important,” we might realize that someone could
accept that logic helps us to avoid believing falsehoods without accepting that logic is important.

In order to prevent this, we could add the idea “It’s important to avoid believing falsehoods” as a dependent premise because the inference running from “Logic helps us to avoid believing falsehoods” and “It’s important to avoid believing falsehoods,” to “Logic is important,” is very solid.

After we’ve inspected our inferences, we can take a look at our premises.

If a premise is false, we can try to change it to something that’s true. And if a premise is true but might not be believed by our audience, we can transform it into a subconclusion by providing our audience with reasons to believe it.

We then look at the inferences and the premises again and continue fixing them until the argument is good, or at least good enough.

Of course, we might not be able to fix our argument. If it looks like our argument can’t be repaired, we might try to construct another argument for the same conclusion.

And if we can’t find any good argument for that conclusion, if no argument for that conclusion works, we might consider the possibility that our conclusion is mistaken and change our conclusion by opting for another answer to the original question.

Finally, if no answer to our original question can be supported by a good argument, we should reconsider the question itself. Perhaps our question is malformed in virtue of assuming something that’s false. All questions assume things, after all. If I ask you how to get to the drugstore, for example, I’m assuming that there is, in fact, a route extending from where I am and terminating at the drugstore. I’m assuming that there isn’t a rip in the fabric of space in between here and there. Most of the time, questions are acceptable because what they assume is true, but sometimes questions assume falsehoods and then they run into trouble. “Have you stopped stealing candy bars from the drugstore?” for example, assumes that you have stolen candy bars from the drugstore and this makes the question impossible to answer. If you say “Yes,” you imply that you once stole candy bars but have now reformed, and if you say “No,” you imply that you’re continuing in your wicked,
candy-bar-stealing ways. This question can’t be answered. It needs to be unasked, by having its false presuppositions unmasked.

3. Communicate the Argument

If we are able to construct and argument that we like, we may want to communicate our argument to others. Frequently this will involve writing a passage containing the argument, and the most fundamental rule is that we want to ensure that our passage makes the argument easy for our readers to analyze. We want people to be able to identify our ultimate conclusion, understand what other ideas are important, and see how everything fits together. Using words like “therefore” and “because” to signal inferences can be helpful.

Where Next?

At this point, you may choose to return to the discussion of argument recognition, to return to the examination of argument analysis, to return to the study of argument evaluation, or to replay this examination of argument construction. Simply click on the appropriate button. I’ll give you a few seconds to make your selection. If you don’t select one of these topics, this presentation will continue with some brief summary comments about the basics of critical thinking.

That’s It!

And that’s it. We’ve discussed the basics of argument recognition, argument analysis, argument evaluation, and argument construction.

Beyond the Basics

Of course, there’s a lot more to learn if you want. We can improve our ability to recognize arguments by learning how to distinguish them from explanations. Analyzing arguments is easier if we learn to recognize more inference indicator expressions, learn tests for identifying dependent reasons, and learn how to identify and summarize the main points in longer texts that may contain multiple, interrelated, arguments. Our ability to evaluate arguments can be refined by learning how to assess special kinds of premises and by learning how to assess inferences by constructing counterexamples, identifying missing subconclusions, identifying hidden assumptions, spotting informal fallacies, and using symbolic logic.
And finally, our skill at constructing arguments can be enhanced by knowing how to employ special subject-specific research techniques. However, although these extras are nice, they aren’t necessary. They can make critical thinking a lot easier, but the basics that we’ve seen here are enough to let you recognize, analyze, evaluate, and construct literally any argument no matter how complex. They honestly are.

Practice. Be nice.

Of course, critical thinking is a skill, and as with any skill, mastering it requires practicing the basics over and over again, until they become second nature. At this point, though, you already know more about critical thinking that many people do, and with a moderate amount of practice, you’ll get pretty good at it. Then it will be important to remember that the purpose of critical thinking isn’t to locate and point out problems; the purpose of critical thinking is to get nearer to the truth and to understand how people think. In critical thinking, as in everything else, the stronger you get, the gentler you’ll need to be.

Have fun. And be nice.