

Unit 4

Sophisticated Evaluation of Arguments

Introduction

Back in unit 2, a simple theory of good argumentation was presented. According to that theory:

A good argument is one whose premises make it rational to believe the conclusion.

In this unit, a number of extra details will be added to that theory, making it more complex but also more believable as a theory of good argumentation.

Learning objectives

When you have completed this unit you should be able to:

1. describe the significance of confidence when evaluating arguments;
2. match the significance of argument to the understanding of the target audience when evaluating arguments;
3. illustrate the significance of speaker's knowledge of the audience when evaluating arguments;
4. describe the significance of background knowledge when evaluating arguments; and
5. evaluate all sorts of arguments.

Assigned reading

Read the article by Robert Chernomas, "For Profit System No Prescription."

How to proceed

1. Read the study notes for unit 4.
2. Read the article by Chernomas.
3. Answer the following questions on Chernomas's article:
 - What is Chernomas' main conclusion?
 - What are his subconclusions?
 - What are his premises?
 - How good is his argument?
4. Once you have thought about these questions, submit your answers by clicking on **course discussion** on the course web site and compose your message. Fellow students will give feedback, and perhaps ask questions. In addition, your instructor will respond to comments from students, and may ask for clarification on student views stated in the discussion.

Study notes

Rational belief

If you make a claim of which you are quite confident, such as “there’s no water in any recipe for meringues,” and someone asks “is that really true?” you will probably say “oh, yes” or something of the sort. But if you say something of which you are not quite as confident, such as “Dinosaurs and mammals did not live together” and someone asks “is that really true?” you will probably say “well, I think so” or something of the sort. Often, we will only say “this is *true*” when we feel like we know it is true. When we do not feel quite as confident, we do not always like to say something is true—we might rather say “I believe it” or something of the sort.

This fact about the way we talk reveals nothing much about truth, but a lot about beliefs. Beliefs, both true and false, are held with various degrees of *confidence*. Sometimes we feel we have knowledge: we are extremely confident. Other times our confidence is moderate but not total, or middling, or weak, or really we have only the slightest suspicion that something is really the case. This is significant, because the justification you ought to have for believing something depends a lot on how confident you are in believing it, and having justified beliefs is a key part of being a critical thinker. This section will discuss how arguments can be evaluated in a way that takes into account different degrees of confidence.

The first thing to do is to improve upon our earlier theory of rationality. In an earlier unit, the following theory of rationality was suggested:

A rational belief is a belief (or thought) a person holds that is consistent with all the evidence that person has.

This theory was easy to use, but it did not take a number of things into account, and the fact that beliefs are held with different levels of confidence is perhaps the most important. A better theory of rationality might look something more like this:

A rational belief is a belief (or thought) a person holds with the appropriate level of confidence, given all the evidence that person has.

Beliefs are not held with the appropriate level of confidence if you are convinced of something which, according to your other beliefs, is likely to be false, or if you only suspect something which, given your other beliefs, is quite likely to be true. After all, if all the information you have suggests one thing, but you only weakly acknowledge its possibility, then probably (as far as you can tell) you are eventually going to be forced to revise your belief, accepting it with more certainty than you do at the moment. Likewise, if you accept something with great confidence, but your supporting evidence is a single, weakly held suspicion, you are likely going to be forced to be less confident in that belief sometime in the near future. Some examples follow.

Example of a too-strong belief

You firmly believe that your roommate hates you, only because your roommate moved your dirty dishes into the sink after being asked not to.

Analysis

At most, that's a small reason to worry that your roommate is hostile; it is not likely to be a good reason to be convinced. Given that you firmly believe your roommate is violating your fairly minor request, and given that you are fairly confident that lots of people display this level of discourtesy without actually hating the person whose requests are ignored, it would be premature to do more than suspect that your roommate might dislike you.

Example of a too-weak belief

After many years of unhappiness as a couple, your spouse yells "I hate you! I'm leaving!," packs a suitcase, moves in with family in another country, and files for divorce. In response, you only have a sneaking suspicion that your spouse might be leaving you.

Analysis

Clearly, you ought to be much more certain that something is going on!

Later on, in discussing probability, there will be more to say about evaluating how firmly you ought to believe something, given your evidence. The basic point, though, should be obvious. If your evidence and background knowledge makes something likely, you should be confident that it is true, and if your evidence hints at something, you should suspect (but only suspect) that it might be true, and so on. Your confidence in a belief should be appropriate to the confidence in your evidence.

Why did our earlier theory of rational belief talk about consistency? The answer is that consistency is necessary in a set of beliefs when all beliefs are held with high confidence. So if people only had one degree of confidence—high confidence—in their beliefs, then it would be correct to say that rationality requires consistency. However, because people actually have a wide range of confidence levels in their beliefs, people are not required to be strictly consistent in order to be rational. For instance, you might be pretty sure that a sibling loves you, but also have a sneaking suspicion that the sibling merely tolerates you politely. Although the two things you believe cannot both be true, and so are inconsistent, you are not confident about them both. Instead, you are pretty confident in holding one, and you hold the other with great uncertainty. In such a case, your beliefs are not irrational. You simply have a belief along with some rational doubts. Of course, if you get snubbed by your sibling over Thanksgiving dinner, and as a result firmly believe that the sibling does *not* love you, while also believing (in the back of your mind) that the sibling *does* love you, *which* would be irrational. But then, many people become irrational at family gatherings.

It is worth mentioning a special case, while on the subject of irrational belief: the irrationality possible in a single belief. A single belief fails to fit with itself by being *self-contradictory*. A belief that a person is a married bachelor would be an example of a belief embodying a contradiction. Beliefs in contradictions are beliefs in things, which are impossible by the very definitions of the words used to express them—anyone with enough knowledge to actually have the belief has enough knowledge to guarantee that it cannot be true. Naturally, it would be irrational to believe in such things.

So: beliefs are made irrational (unreasonable, unjustified) by being held with an inappropriate degree of certainty. In a perfectly rational (reasonable, justified) system of beliefs, none of a person's beliefs are held with the wrong level of confidence. Most people are rough approximations to perfectly rational believers—we do not believe many contradictions, it would not take many changes to make our firm beliefs consistent, and, in general, most of our beliefs would not have to be held much more firmly or weakly in order for them to be held with exactly the right level of certainty given our other beliefs. Unfortunately, being roughly rational in your beliefs still leaves lots of room for improvement.

Sometimes it is obvious when a person believes something irrational. For instance, if a person has just had a child die but claims that the child might still get better, that is an obvious example of epistemic irrationality. Sometimes it is much harder to know when someone is being irrational. Suppose a six-year-old saw his parents have a big break-up of the kind mentioned above (one parent packing a suitcase and moving to another country, etc.). If this six year-old believes that his parents will be together tomorrow, that might not be irrational. After all, it might be consistent with the six year-olds beliefs, because the six- year-old might not know that sometimes parents get divorced and live apart permanently—perhaps, as far as the six-year-old knows, parents are permanently together, even after fights.

If you believe someone has an irrational belief, then you are committed to the claim that the person has the evidence needed to figure things out. Not the skills, necessarily, but the evidence. If someone seems to have an irrational belief, but then it turns out (like the six-year-old) that the person is ignorant of crucial facts, then the person does not actually have an irrational belief after all. In other words, you cannot be irrational if you just lack facts. You only get to be irrational if you do not use the information you have to full advantage.

Is there a straightforward test for determining whether your beliefs are rational or not? No. There is no algorithm you can follow to conduct an “error check” on your own beliefs, or on anyone else's, for that matter. All that you can do is think about the different things you believe, and attempt to notice incoherence, inconsistency, and over- (or under-) confidence. That is why being a critical thinker is a skill, rather than something anyone who makes the effort can do perfectly. Still, things can be done to develop this skill, and one thing you can do is to think about whether other people have fully rational belief systems. Imagine the following four people:

Agya lives five hundred years ago, in a small village in (present-day) Tibet, surrounded by high mountains. He has never been very far from his village or climbed a mountain peak, and has never spoken to non-Tibetans. It is the standard view amongst people in his village that the world is flat, and Agya is confident that they are right. Is Agya's belief rational?

Helen lives two thousand years ago, in Athens, on the coast. She has sailed to (present day) Italy, and had a chance to watch Athens sink slowly out of sight as she sailed away. She has heard various philosophers hold that the world is round and others hold that it is flat. Helen suspects that the world is rounded, at least in part. Is Helen's suspicion rational?

Troy lives in St. John, New Brunswick, in present-day Canada. He has personally never even seen the sea, much less been travelling on it (or on land, or in an airplane, for that matter). Troy just does not get out much. Although Troy has been to school, he has some unusual ideas, and one is that the Earth might just possibly be flat. Is Troy's idea rational?

Ada is Troy's neighbour in St. John, and she is more confident than Troy that the world is flat—quite confident, in fact. She has read a number of books agreeing with her, and although she has travelled extensively, she has always argued that facts about the movement of light and the opacity of the air explain the apparent counter-evidence to her theory. Is Ada's belief irrational?

We all know that one of the simplest pieces of evidence for the roundness of the Earth is the visible evidence of the Earth's curvature. From an airplane, one can see that nothing gets in one's way of seeing more, except perhaps the surface of the Earth itself, and yet one does not see everything. Furthermore, one always sees a full circular horizon—one never sees an "edge" while flying—suggesting that the Earth is a huge sphere. Seeing a ship sail away, slowly appearing to sink as it gets further away, likewise suggests that the Earth is curved. And of course, one can hardly get through first grade without being taught that the Earth is a sphere by apparent experts (teachers and parents).

Now, none of the facts just mentioned shows that Agya, our imagined Tibetan, is irrational in being confident that the Earth is flat. After all, Agya does not have access to modern schools, or airplanes, or ships. And in fact he probably lacks access to any very sophisticated theorizing about the nature of the physical world, since he lives in an isolated village. Furthermore, the people around him believe that the world is flat, and in general one can trust popular opinion. All in all, Agya lacks evidence inconsistent with his belief, and his belief fits well with what he has seen and been told. Agya is rational in believing the world to be flat; mistaken, of course, but rational.

Helen, our imagined Athenian, is in quite another situation. She has not been in an airplane, but has sailed on the sea, and so has some first-hand experience of the curvature of the Earth. She has also been exposed to some theoretical considerations regarding the Earth's shape. Is Helen rational to suspect that the world is rounded, at least in part? No. She should really be quite a bit more confident, given how limited her belief is. After all, Helen does not believe that the whole world is round, just that some of it is rounded in shape. The evidence of her own eyes ought to be enough to convince her of that—the sea has no sharp edges, and yet it gradually comes between her and any object she sails away from. Helen might or might not be justified in being confident that the whole world is flat—that depends, in part, on how convincing the arguments she has heard are. But given that she is confident in the evidence of her own eyes, she ought also to be confident that some (large) parts of the Earth's surface are rounded.

Troy and Ada are an interesting pair. They are both, surely, irrational. Although Troy has never seen the curvature of the Earth with his own eyes, he has many sources of evidence, such as his memory of school lessons, his belief that teachers do not in general lie, his memories of what sorts of things people generally do not make mistakes about, and so on, all pointing to the conclusion that, if people

generally say the world is round, he ought to believe them. For him to even suspect that they might be wrong is for him to have too much confidence in the possibility of a flat Earth. But is Ada more rational or less? In one way, she might seem more rational, because she has other beliefs that back up her belief in the flatness of the Earth—her belief has others with which it fits. On the other hand, she has all the evidence that Troy has that the Earth is flat, plus more from personal experience. On balance, Ada has to be counted as irrational, to some extent, in being confident that the Earth is flat. While vague ideas about light bending and dust hiding the true horizon might be enough to make her belief rational if all she had to rely upon were her own personal experience, Ada is also an educated modern citizen, and has the opinion of people she ought to respect, given what she has heard about them, to draw upon. Scientists agree: the Earth is round, and Ada knows this. Since they seem to manage missions to the moon fairly well (and since Ada has heard of this too), they ought to be trusted in these matters. Likewise, if Ada's flat-Earth books were her only source of information, she could not be counted irrational for believing them, but given that they are not, she must be counted irrational for not seeing them for what they are—the work of crackpots. Whether her particular belief in the flatness of the Earth is more or less rationally held than Troy's is probably impossible to say—rationality, like baldness, redness, and many other qualities—is not limitlessly precise. If we say that both are clearly less rational than they could be in believing the Earth to be flat, we have said pretty much all we can.

It is important to keep in mind that it is not the fact that Troy and Ada are wrong that makes them irrational. After all, Helen is right but irrational, while Agya is wrong but perfectly rational. What matters for rationality is making the most of the evidence one has available, whether through the senses, the testimony of apparently honest people, memory, or whatever.

With all of this said, we can now return to our theory of good arguments. How should the fact that beliefs come in different degrees of confidence be reflected in a theory of argument quality? Our current theory says:

A good argument is one whose premises make it rational to believe the conclusion.

Now we can ask, “believe with what level of confidence?” One natural answer might be this: a good argument is one whose premises make it rational to believe the conclusion *with high confidence*. However, this does not seem correct upon reflection. Consider the following sort of situation. You are talking to a friend about whether or not it is safe to go rowing on the lake. Your friend is certain that the weather will stay clear and sunny. You, however, have a suspicion that the weather might change. You are far from confident that the weather will turn bad, but you suspect it might. So you make an argument to your friend:

Even though the weather is nice now, it can always change. I worry that a storm is coming. After all, there was rain yesterday out west, and we often get the same weather they do, just a day later.

If I were to reconstruct your argument, it might look like this:

- Premise 1 Even though the weather is nice now, it can always change.
- Premise 2 There was rain yesterday out west.

Premise 3 The speaker's region often gets the same weather as the west, just a day later.

Conclusion (presented just as a worry): A storm is coming.

Your argument is not meant to show that a storm really is coming. It is just meant to show that it is reasonable to be concerned about a storm coming: to show that a rational person will not be *sure* that the weather will stay good. As such, it seems a very good argument. And if it is a good argument, then there can be good arguments that try to show that the conclusion is rationally believable with very little confidence, just as much as there can be good arguments that try to justify certainty in the conclusion.

This suggests the following revision to the theory of a good argument:

A good argument is one in which the premise makes it rational to believe the conclusion with the same confidence that the person advancing the argument intends the conclusion to be accepted.

This could also be put as follows:

For an argument in which the conclusion is put forward with degree of confidence C, the argument is a good argument if and only if its premises make it rational to believe the conclusion with degree of confidence C.

So if I am trying to convince you of the truth of my conclusion, then my argument is good only if you can rationally believe me with high confidence, while if I am trying to convince you to suspect my conclusion, or share my hunch in my conclusion, then my argument is good only if you can rationally believe my conclusion with low confidence.

This covers confidence. But there is still much more to say about good arguments.

Target audience

The next thing we need to consider is the target audience, that is, the audience at which the argument is aimed. So far, the assumption has always been that you, the person encountering the argument, are also the audience of the argument. So you have been asked to consider whether or not the argument makes it possible for *you* to rationally believe the conclusion. However, imagine that you are simply overhearing an argument. Imagine that Annabelle is making an argument to Vaclav, and that her argument goes like this:

Hey, Vaclav. What happened to our bet? You said "five bucks says my team wins," but they got their butts kicked. You owe me.

Or, more formally:

Premise 1 Vaclav bet Annabelle five dollars that his favourite team would win.

Premise 2 They didn't.

Conclusion Vaclav owes Annabelle five dollars.

Is this a good argument that Annabelle is making or not? Well, we do not know because we do not know what Vaclav knows. If Vaclav remembers making the bet, and knows that his team lost, then Annabelle is making a good argument: he

should accept her conclusion. But if Vaclav did not make the bet, or if Vaclav's team actually won, then it seems Annabelle's argument is quite poor: Vaclav would not be rational to accept her conclusion. What seems to matter is what Vaclav knows. If Vaclav knows Annabelle is telling the truth, then her argument is good. If he knows that she is mistaken, then her argument is bad. Thus, what matters is not whether *we*, the outside observers, can rationally accept Annabelle's conclusion based on her premises, but whether *Vaclav*, the target of the argument, can rationally accept Annabelle's conclusion based on her premises. A good argument is one that should rationally convince the target of the argument. Whether or not outside observers get convinced is irrelevant.

Many examples that make this point could be drawn from the history of science. As science progresses, scientists make arguments in favour of their new theories. These arguments are often very good arguments. And yet, in fifty years, these arguments are often out of date. New evidence and new theories have come along that make the old argument for the old theory obsolete. Yet that does not mean that the old argument was a bad argument *at the time it was made*. At that time, it was, perhaps, an excellent argument. But with the growth of knowledge, it has come to be true that no one making that argument today would make a good argument.

For instance, people once argued that there must be an organizing "life force" (an *élan vital*) in living organisms, because there was no other way to explain how a small seed or sex cell could turn into a complex, living thing. When the argument was first made, it was not a bad argument, because people, reasonably enough, did not have any idea how a purely physical system of atoms could possibly create such an organized product as a living being. Today, however, when most well-educated people know about DNA and have at least a rough idea of how embryos develop, the argument is not as good. A well-educated, rational person might have accepted the argument for the existence of an *élan vital* two hundred years ago, but a well-educated, rational person of today would be much more sceptical.

How can you tell what the target audience of an argument is? When you are present in person for an argument, it is usually easy to tell what the target audience is—you can just see to whom the speaker is talking. On the other hand, when an argument appears in print, things can be more difficult. In such cases, the best place to start is generally with the site of publication. Books published by university presses, found only in libraries and the scholarly sections of bookstores, are generally targeted at narrow, specialized audiences trained in the subject in question. Arguments in such books legitimately presuppose a tremendous amount of background knowledge, since the books are only meant to be read by other experts. To go to the opposite extreme, writers for tabloid newspapers are well aware that their primary audience is not university-educated and do not follow world affairs very closely. If a tabloid writer were, for some reason, to want to argue for a conclusion about free will or the historical significance of the Boxer rebellion, the writer could not properly assume an audience knowledgeable about such things, and more basic premises would be required for a good argument. But in both academic writing and tabloid writing, it is next to trivial to determine the target audience. More interesting problems arise when the audience is harder to determine.

Consider, for example, a newspaper editor who writes an editorial against government fiscal policy. The editor knows that many readers of the newspaper do not know anything about economics, while others know much more than the editor. At what audience is the editor likely to direct her arguments? Sitting in your chair reading the newspaper, how are you to guess the editor's choice? The problem is substantial. After all, you cannot just look into the editor's mind. In such situations, all you can do is look for particular clues and make the best guess possible. If the editor assumes a lot of background knowledge on the part of the reader, then the editor is probably not aiming that argument at every single reader of the newspaper. If the editor starts explaining fiscal policy by asking the reader to imagine a system of tokens used by a group of parents for arranging baby-sitting favours, on the other hand, the editor is clearly aiming the editorial at less knowledgeable people. Interpretative tasks like this call for a certain amount of charity, or generosity, on your part as an interpreter. When you are not sure, give the other person the benefit of the doubt.

Responsibility for the argument

Imagine two dancers, Ginger and Fred. Both decide to hold dance classes, and both make an argument to their classes with the premise that yoga is good for developing the strength and flexibility needed for great dancing, and with the conclusion that the students should take yoga classes. But, let us imagine, all of their students are already experts at yoga, and most are in fact yoga instructors. Thus, it is not rational for them to accept the conclusion Ginger and Fred both advance—they will not really benefit from taking classes in yoga. Does this show that the argument is a bad one? That depends on whether Ginger and Fred should have known better, doesn't it? Perhaps all of Ginger's students look like girls in their mid-teens and sound like average high-school students. If so, then Ginger cannot be blamed for failing to realize that her students are experts in yoga, and so do not need to attend classes. Ginger *should* believe that her argument will make her conclusion rationally convincing to her students, even though it in fact does not. Perhaps Fred has a somewhat different class. Perhaps he knows that all of his students come to his dance class straight from another class down the hall, where some sort of coaching certification class is being held. Perhaps he has also seen most of his students waiting for him sitting comfortably in the lotus position, wearing Indian robes, and perhaps they all look like Fred's stereotypical image of people experienced in yoga. If this were the case, then Fred probably should *not* think his argument's conclusion would be believable to his students. If he were to make the argument anyway, that would be a flaw in it.

This story seems to show that a good argument is not just one that makes it possible for the target audience to rationally accept the conclusion with the intended level of confidence. After all, Ginger's argument would not rationally convince her audience, and yet it seems she did nothing wrong in making the argument. The reason she did nothing wrong, it seems, is that she herself was rational to believe that her argument would work. Following this thought, we reach the conclusion that a good argument is not one that actually works, but one that *should* work, so far as the person making the argument can tell. We get an improved theory of argument quality that looks like the following:

A good argument is one that, as far as the arguer can tell, has premises making it rational for the target audience to believe the conclusion with the same confidence that the person advancing the argument intends the conclusion to be accepted.

Judging the rationality of the arguer, as well as the rationality of the target audience, makes evaluating arguments even harder. Now, it is not enough to know that the target audience can rationally be persuaded; it is also necessary to know whether the person making the argument could have realized this. Fortunately, this is not a practical problem in most contexts. In most contexts, people making arguments know their audiences fairly well. In such cases, if the argument can rationally convince the audience, that will be knowable by the arguer, and if the argument cannot do its job, that also will be knowable by the arguer. Things only become tricky when the arguer does not really know the audience very well at all, or when the target audience has surprising features that make it tricky to argue with them about a specific topic.

In general, then, if an argument ought to be persuasive to its target audience, then it will be a good argument, and if an argument ought not to be persuasive to its target audience, then it will not be a good argument. But in rare cases, these generalizations will not be true: cases like that of Ginger in the example above. Making a judgment about whether an arguer should have known that a given argument would not make it rational to believe the conclusion can be quite difficult in these rare cases. Imagine you read something in a magazine, and you know that the audience will not be able to rationally accept the conclusion. Should the author have known better? Is the author like Fred in the previous example? Or is the author not to blame for not seeing the audience would be unable to believe the conclusion? Is the author more like Ginger? In general, an author picks an audience knowing a fair bit about it. One chooses to make one's arguments to one's peers, or fellow citizens, or other researchers working on the same project, or the like. In such cases, it is usually safe to guess that, if the audience cannot accept the conclusion rationally, then the author should also have realized this. Sometimes, though, an author picks an audience with which he is less familiar, and this can lead to difficulties. If an older adult writes an argument aimed at teenagers, she may not realize that certain premises, accepted by almost everyone when she was a teenager, are no longer believed by current teenagers, and this may render a good argument one whose conclusion cannot be accepted by the target audience. As with identifying the audience, there are no certainties—one can only make guesses based on the little clues one gets.

Background knowledge

A good argument, we have been saying, makes it possible for its target audience to rationally believe its conclusion on the basis of the premises presented. But notice that the premises alone will never support rational belief in the argument's conclusion. Background knowledge is always also required. For example, consider the following simple argument, made by Ruth to Elijah:

The only beer in the house is in the fridge. So if you want beer, you will have to go to the fridge.

Its basic structure is very simple. Ruth is making the following argument:

Premise 1 The only beer in the house (that Ruth and Elijah are in) is in the fridge.

Conclusion If Elijah wants beer, he will have to go to the fridge.

If this argument is being made in an ordinary, everyday context, then it will clearly be a good argument. But just think how much background knowledge it presupposes. The argument would not be a good argument if Elijah could magically make beer appear in his hand (and if both he and Ruth knew that). Then the conclusion would be irrational for Elijah to believe. He would know that he did not have to go anywhere in order to get beer. And the argument would not be a good argument if Elijah could just get one of his bodyguards to go to the fridge for him. And the argument would not be a good argument if there was beer in a cooler just outside the house. And so on. Ruth's argument is a good argument, but it is only a good argument because she and Elijah both know that none of these imaginary conditions are real. They know these things, but do not bother to think about them when arguing. They are simply background knowledge.

You might think that, if Ruth were not lazy, she would mention all of this background knowledge in her argument. You might think that Ruth's argument will not be a good argument until she mentions all of these background facts; this seems a mistake. If a good argument could not rely on any background knowledge on the part of its audience, then every good argument would have to be immensely long and tedious. No one in history would ever have made a good argument. That seems obviously false. History is full of good arguments, as well as bad ones. Thus, it must not be a requirement of good arguments that they contain every possible piece of background knowledge that they presuppose.

The significance of all this for argument evaluation is straightforward. A good argument does not convince a rational person merely because of its premises, but because of its premises *working together with the background knowledge of the target audience*. (It would be even more accurate to say "background beliefs", because it is reasonable to rely on false background beliefs just as much as to rely on true ones when one makes an argument.) This gives us a final modification to our theory of good argumentation.

A good argument is one that, as far as the arguer can tell, has premises which, together with background knowledge, make it rational for the target audience to believe the conclusion with the same confidence that the person advancing the argument intends the conclusion to be accepted.

This is still a controversial theory of good argumentation, but it is the best that this can be accepted here.

Lots of examples

It is time for some examples illustrating various components of the theory of good argumentation that we have developed.

First Example: Having the right level of certainty

Suppose that someone talking to you were to make the following argument:

In the Autumn of 1999 Canada suggested that the Security Council of the United Nations should become “more democratic.” Now, the Security Council has five permanent members: the U.S.A., Russia, China, Britain, and France. For the Security Council to become more democratic would involve reducing the power of the five permanent members. So Canada is suggesting that the permanent members should give up some power. Why would Canada do this? Well, Canada is a close ally of the U.S. The U.S. does not get much out of being on the Security Council, since it is the most powerful country in the world anyway. But potential opponents of the U.S., like China and Russia, gain a lot of power by being on the Council, compared to what they would otherwise have in world affairs. If the Security Council became more democratic, then the U.S. would lose little but its potential opponents would lose more. So it seems obvious that the reason Canada made its suggestion was to help the U.S. reduce the power of other countries on the Security Council.

Analysis of the first example

If you are an average undergraduate, you should not accept the conclusion with the confidence with which it is asserted by the speaker. You are told it is “obvious” that Canada has this particularly Machiavellian motivation, but given how little you (probably) know of the inner workings of the U.N., this evidence seems to justify only a weak suspicion in you at most. Surely Canada might equally have been trying to annoy the U.S., or to assert itself as a player on the Security Council, or perhaps just keep up its profile in the international media. These other possible motivations seem similarly plausible, and you should not accept the proposed conclusion as “obvious.”

It should be noted that, if the same argument were made to the French ambassador to the U.N., it might be better or worse, depending on what the speaker knew about the beliefs of the French ambassador. For instance, if the speaker knew that the ambassador had excellent independent reasons to believe that the U.S. was trying to reduce the power of the Security Council, then the argument would be much better: the target of the audience would be known to be justified in accepting its conclusion on the basis of the evidence, plus background knowledge. On the other hand, the ambassador might be believed to have excellent independent reasons for thinking that the U.S. was trying to promote the power of the Security Council. Given this background knowledge, the speaker would have made a much weaker argument—one less likely, as far as she could tell, to rationally convince the listener.

Second example: Avoiding inconsistency

Imagine the following argument is made to you by a scientist friend:

Infusion of dopamine antagonists would block the modulatory effects, if any, of descending nigro-striatal pathway neurons throughout the spinal cord. Now, our interest is in the H-reflex, and we have found that modulation of the H-reflex has been observable under the influence of a wide variety of neuromodulator antagonists. So we should be able to see the modulatory effects of the nigro-striatal pathway neurons on the spinal neurons modulating the H-reflex even if we infuse dopamine antagonists.

Analysis of the second example

Although you do not know whether the conclusion is true (or what it means!), but you can still see there is something wrong with this argument. The argument is clearly bad, because accepting it would involve accepting an inconsistency with high confidence. Consider the first sentence, and the last sentence. If you abstract from the unfamiliar content, you will see that what the first one says will happen, the last one says will not happen. They cannot both be true—they are inconsistent. If you were to accept this conclusion, and the premise that supports it, you would find yourself believing an inconsistency, which would be irrational. And since your scientist friend ought to see that this is so, your friend should never have made the argument in the first place.

Third example: Avoiding contradictions

Assume for the sake of argument that $a = b$. If we multiply both sides by a , we get $a^2 = ab$. Then, subtracting b^2 from both sides we get $a^2 - b^2 = ab - b^2$. Then, factoring both sides, we get $(a + b)(a - b) = b(a - b)$. But this equation has a common term: $(a - b)$. It follows that by cancelling this term we get $(a + b) = b$. Recalling our original assumption, we see by substitution that $(b + b) = b$. So, in other words, $2b = 1b$, or $2 = 1$.

Analysis of the third example

This argument ends with a logically impossible claim ($2 = 1$) as its conclusion. Hence, it would not be rational for anyone to accept the conclusion. Since the person making the argument ought to know this, he cannot reasonably think the conclusion can be rationally believed. Hence the argument is a bad one. (Of course, the argument might be a good effort to amuse engineers, or teach math students algebra. But it is a bad argument in that it cannot be expected to rationally convince anyone, and that is the standard of interest to us.)

Notice that you need not actually believe the conclusion or premises yourself in order to make a good argument. Suppose that you are making an argument to a young child, trying to convince the child that spaghetti grows on trees. You might say that spaghetti comes from a far-away country, which is why the child has never seen a spaghetti tree. You might point out that spaghetti starts out hard, and “explain” this by saying that spaghetti noodles are twigs of the spaghetti tree. And so on. If the child was too young to know better, and if you could keep a straight face while telling these lies, you would be presenting evidence sufficient to convince a rational child that what you were saying was true. In other words, you would be making a good argument—a good argument *for that child*, of course, but a good argument nonetheless.

Also notice that, while you can make a good argument for something you do not believe, it does not follow that cheap propaganda counts as good argumentation. Cheap propaganda is not usually believed by the people who write it; in this way it is like the person who makes an argument to fool a young child. But cheap propaganda also uses techniques to bypass rationality. An argument that aims to make the audience believe its conclusion without aiming to make such belief rational is not a good argument, and this is just what our analysis claims.

Fourth example

A good argument leads people to the conclusion *because of the force of the premises, plus background knowledge*.

To illustrate the point, suppose someone made the following crazy argument:

Premise “A” is the first letter of the English alphabet.

Conclusion For all right triangles, squaring the length of the hypotenuse gives a value equal to the sum of the squares of the lengths of the other two sides.

The conclusion is one that rational, well-educated people should believe, but the premise is not relevant to the truth of the conclusion, and so the reason one should believe the conclusion has nothing to do with the premise. Thus, the argument is a bad one. Facts about the letter “A” are not relevant to geometry, and so do not contribute evidence in support of the conclusion. The following example makes the same point, but for a somewhat more realistic case:

I always said Canada is a democracy, but now I have proof. Three of my friends and I went to the grocery store to complain that they weren’t selling our favourite flavour of ice cream, and the next day they had it in stock! Pretty great, eh?

Now, we may assume that the conclusion is true, and rationally believed by everyone concerned. The only problem is that the premises do not provide relevant evidence. A person might be rational to accept the claim that Canada is a democracy, but not because the person learns that a grocery store responded to customer complaints! The argument is not as bad an argument as it possibly could be, since it does seem to be true that non-democratic countries are less responsive in general to consumer demands—so the fact that one can get the local grocery store to stock different products does suggest, ever so slightly, that the local grocery store is located in a democracy. However, the link between consumer responsiveness and democracy is not very strong, to say the least! Hence the argument is a bad one. If we take the conclusion to be, not simply that Canada is a democracy, but that Canada has been proven to be a democracy, then the argument gets even worse, since there is no necessary connection between democracy and corporate sensitivity to the desires of consumers (see unit 5, Logic).

Bonus #1: A sample argument

It is time to go through one example in depth. Here is an argument; for present purposes, imagine it is written by a student in Critical Thinking, and that it is directed at you, also a student in Critical Thinking.

Can There Be a War on Terrorism?
by Dora Durian

After September 11, 2001, the United States declared what it called “a war on terrorism”. But what is this, really? In particular, is this war on terrorism *literally* a war? It seems to me that the answer to this question must be, “No, it isn’t.”

When Canada went to war with Germany in 1939, what did we do? Well, there was a debate in Parliament, and at the end of it a motion was passed declaring war on that nation. When the end of the war came, the government signed a peace treaty

with the German nation. This is how a real war happens in general. (So-called “police actions” like the one in Vietnam are more complicated, but I am just talking about war, here.) If this is how war works in general, then it follows that every literal war must be a war between two political entities, such as nations. But in a so-called “war on terrorism”, the enemy is terrorism. Terrorism and terrorists are not a single political unit. They are not even an alliance, like the “Axis powers” of the Second World War. They are not the sort of thing that can sign a treaty declaring an end to their side of the war. Thus, you cannot make war on terrorism.

In the same spirit, to make war on anything, a country must make a legal declaration of war. In the United States, this requires an act of Congress. But no such legal declaration has been made. Oh, there’s talk. But talk is cheap. It does not add up to actual war on its own.

Finally, and most importantly, the so-called “war” is not working. By invading Afghanistan, the United States stopped a few terrorists, but by not rebuilding that country after the war, it is just making more enemies. By invading Iraq, the United States has ruined a country that did not support terrorists, and is turning it into a country that will support terrorists. How can you call something a war on terrorism when it is only making more terrorists? You cannot.

Although we may want an end to terrorism as much as the next person, the next time you hear someone talk about a war on terror, take a moment to ask her or him just what that is supposed to mean.

Interpreting the argument

Well, this is a fairly meaty argument, and there is a lot to say about it. We should begin by interpreting just what Dora Durian is trying to say. What are her premises? What is her conclusion?

Try to answer the latter question first. Once you understand someone’s conclusion, understanding what she takes to be evidence for it is usually easier. Looking over Dora Durian’s essay, it is clear that she is trying to tell us something about the United States and its “war on terrorism.” In her first paragraph, Durian writes:

In particular, is this war on terrorism *literally* a war? It seems to me that the answer to this question must be, “No, it isn’t.”

So Durian asks a rhetorical question, and then answers it. By doing so, she makes the claim that the U.S. war on terrorism is not literally a war. This is an interesting claim, and a fairly controversial one. It is also the only controversial claim in the first paragraph, and it is a claim that is closely related to the title of the essay. These hints all suggest that this claim might be Durian’s conclusion.

We can confirm these hints by examining the next three paragraphs. In each one, Durian raises a new idea that supports her claim that the U.S. war on terrorism is not literally a war. So this claim is surely her main conclusion.

Conclusion: The U.S. war on terrorism is not literally a war.

Notice that Durian’s conclusion is not “It seems to me [Dora Durian] that the U.S. war on terrorism is not literally a war.” After all, Durian is not trying to convince us

that she has a particular belief. She is trying to convince us that the U.S. is not literally at war with terrorism.

Now, what about the premises? Consider the first paragraph:

- P1 In general, a real war happens with a country like Canada debating war in Parliament, passing a motion declaring war, and signing a peace treaty at the end with a nation like Germany.

This premise was guided by Durian's statement "This is how a real war happens in general." She seemed to be expressing an important single thought. But the word "this" made it unclear from that sentence just what thought it was. So I looked back to previous sentences, and saw that they explained what Durian meant by "this". So I put those ideas together with the sentence "This is how a real war happens in general" in order to create the first paragraph.

- P2 If P1 is right in general, then it follows that every literal war must be a war between two political entities (such as nations).

The parenthetical remark about Vietnam can be ignored because it seems intended to supply background rather than support the subconclusion of this paragraph, to which we will come in a minute. But it would not be crazy to include a remark about Vietnam as a premise.

- P3 In a so-called "war on terrorism," the enemy is terrorism.
P4 Terrorism and terrorists are not a single political unit.
P5 Terrorists and terrorism are not an alliance (like the "Axis powers" of the Second World War).
P6 Terrorists and terrorism are not the sort of thing that can sign a treaty declaring an end to their side of the war.

- SC1 You (one) cannot make war on terrorism.

The word "thus" gives us a big hint that "You cannot make war on terrorism" is a conclusion of some kind, and since we have already identified a main conclusion, and since SC1 makes sense as support for the main conclusion, it is clear that SC1 must be a subconclusion.

So much for the second paragraph. Now look at the third. It appears to introduce a new set of thoughts, which should not be surprising, since that is what paragraphs are for.

- P7 To make war on anything, a country must make a legal declaration of war.
P8 In the United States, this (to make war) requires an act of Congress.
P9 No act of Congress has declared war on terrorism.

One could argue that there should also be an implicit subconclusion here, hinted at but not stated. Such a subconclusion would read "The U.S. did not do what is necessary to go to war on terrorism," or something of that sort, seems quite reasonable. It was also reasonable and simpler to simply leave these three premises as standing on their own, supporting the main conclusion directly. At this

point, there is only one tempting mistake, and that would be to identify the subconclusion, as “The U.S. is not literally at war on terrorism.” After all, that is the main conclusion, and if an argument is properly put together, it will not argue for its main conclusion by just restating the main conclusion as a subconclusion. (That would be to argue in a circle, to say that your conclusion is true because it is true.)

This brings us to the fourth paragraph. According to it:

P10 By invading Afghanistan, the United States stopped a few terrorists, but by not rebuilding that country after the war, it is just making more enemies.

This could also be interpreted as a single premise reading “By not rebuilding Afghanistan after the war on it, the U.S. is just making more enemies,” which gets across the idea Durian needs to support the subconclusion coming up.

P11 By invading Iraq, the United States has ruined a country that did not support terrorists, and is turning it into a country that will support terrorists

SC2 The so-called “war” is not working.

Although this statement comes first in this paragraph, it is actually a subconclusion. It is a broad, sweeping claim, and the next two claims to follow it, P10 and P11, are specific examples supporting this general claim. Thus, SC2 must be a subconclusion for which P10 and P11 are meant to provide support.

P12 When something is only making more terrorists, you can’t call it a war on terrorism.

This ends paragraph four. Only paragraph five is left. But it does not seem to contain any ideas that support the main conclusion. This paragraph is just wrapping up the essay, and reminds the reader indirectly of the main conclusion (by saying “the next time you hear someone talk about a war on terror, take a moment to ask her or him just what that is supposed to mean”). So we have now reached the end of the argument.

A student might be tempted to make various mistakes in interpreting this argument. The main feature of the argument is that the main conclusion is supported by three distinct lines of evidence, because that is how Dora Durian clearly sees the argument. The fact that paragraph three begins “In the same spirit” and paragraph four begins “Finally” demonstrates that Durian thinks of her argument as having three main supports. Any student getting the conclusion right and identifying the three main lines of evidence correctly has done everything basically correctly. Any remaining errors in listing all premises, or in mistaking a premise for a subcon or vice versa, will be only minor errors.

Some students might be inclined to ignore the fourth paragraph. After all, it does not really support the conclusion. Durian’s conclusion is that the U.S. war on terrorism is not literally a war, but her third paragraph only seems to show (at most) that the war on terrorism is not being fought very well. However, to think this way is to misunderstand the task of argument interpretation. To interpret someone else’s argument is just to understand what that person is trying to say. If that person is trying to say something foolish, well, then your interpretation of the argument

should include those foolish ideas. Interpreting an argument is just a matter of re-stating, as clearly as possible, what the arguer meant to say. When interpreting an argument, you should not change the argument in any way.

With twelve premises and two subconclusions, this argument is quite a bit more complex than any other argument this course manual has yet studied. However, , the argument is not nearly as complicated as it could be. Someone could write *quite* a long essay on whether the U.S. war on terrorism is literally a war, after all! But this level of complexity is at least good for practicing.

So much for the interpretation. Now, let us go on to evaluating the argument.

Evaluating the argument

When evaluating an argument, it can never hurt to begin by thinking about whether or not the conclusion is true. For my part, I think the conclusion of Durian's argument is obviously true. What the U.S. has done so far (November, 2003) is selectively make war on two countries, one with a clear link to terrorism (Afghanistan), the other with no clear link to terrorism against the U.S. but a clear link to anti-Israeli terrorism (Iraq). Plus the U.S. is taking non-military actions to prevent further acts of terrorism from occurring in the U.S. But that does not add up to a war on terrorism per se. The "war on terrorism" is like the "war on poverty" or the "war on drugs," not a literal war at all. On the other hand, perhaps someone would claim that the nature of modern warfare has changed, so that the non-military actions should be counted as real warfare. Or perhaps someone would claim that the U.S. is fighting so many wars against so many nations supporting terrorism that the conclusion should be thought false. These points of view might, in principle, be defended well. So, the conclusion is true, but not completely.

Dora Durian herself does not seem completely convinced of her conclusion. She writes "it seems to me" that the war on terrorism is not literally a war. This suggests that Durian is over 50% confident, perhaps, but not 100% certain. There is nothing wrong with this. (Some students think that lack of confidence in a conclusion is automatically a fault, but they could not be more wrong. Lack of confidence in a conclusion can be a matter of intellectual honesty. And how can an argument be worse for the person making it being more honest?) So when we consider her evidence, we need to keep in mind that her evidence is not supposed to make us 100% sure that her conclusion is true. It is only meant to make it seem to us, too, that the U.S. fight against terrorism is not literally a war.

Considering the evidence

It is time to consider the evidence provided in support of the conclusion. Durian has three lines of support for her conclusion. The first is that it is states that make war, and terrorism is not a state. So there cannot be a literal war on terrorism. This line of argument has some good and bad points. On the one hand, it seems that some apparent terrorist organizations have full-fledged political wings that can sign treaties etc.: the PLO and Sinn Fein (the IRA's political wing) come to mind here, or even the ANC (now the ruling party in South Africa). Plus, civil wars are clearly not fought between two distinct states. So Durian is not completely convincing. On the other hand, she is in the neighbourhood of a good point, since Al-Quaeda seems clearly not a state-like political entity, and it is the primary terrorist organization that

the U.S. claims to be “at war” with. So the general principle might be wrong, but the particular application is right.

Durian’s second line of argument is simply that the U.S. has a procedure for going to war, which it has not followed in this case, and so it is not literally at war. This is a fairly strong point. The “war” in Vietnam was not, legally speaking, a war in U.S. terms, and this is because Congress did not declare war on North Vietnam. There seems no obvious reason to treat the “war” on terrorism differently. But, one could point out that, in any meaningful sense, the “police action” in Vietnam was a war. So Dora’s second line of argument may not be perfect. Nonetheless, there is also a world of difference between the Vietnam conflict and the “war” on terrorism. Or, one could point out that Congress did declare war on Afghanistan and Iraq, and say that this shows the U.S. is at war with terrorism. This latter line of thinking has problems, though. After all, the wars against these countries are basically over, but the “war” on terrorism is not.

The third line of argument made by Durian is clearly her worst. She argues that the U.S. is not literally at war since it is only making things worse for itself. But one can fight a war badly or stupidly (plenty of examples of this), so her evidence is not impressive. Durian says that this line of argument is her most important. But we do not need to take her seriously: we can decide for ourselves which parts of her argument are better, and which worse.

Because Durian’s argument has good and bad points, an excellent evaluation of it will note both, and it will not hold that the argument is 100% good or 100% bad. A good case can be made for calling the argument weak but basically more good than bad: the premises are relevant evidence, but need to be supplemented and/or modified somewhat in order to make a fully convincing argument. Equally, a case can be made for calling the argument somewhat bad: the premises are not sufficiently compelling, even though the conclusion is believable (or: the conclusion is not believable, for interesting and intelligent reasons, though it is not stupid). Perhaps we can believe her conclusion with the confidence she presents it, and that her evidence is closely related to why I should believe it, though not completely correct as written, and that this is enough to justify saying that the argument is ok but weak.