Grappling with Good Arguments

We've seen that if we decide that an argument is good then we should be inclined to believe that the ultimate conclusion is true.

Many people have difficulty accepting this. “I can think that an argument is good,” they say, “and still think that the conclusion is false,” and of course they’re right if by “good argument” they mean “an argument that makes some good points,” or “an argument that might be convincing to some people even thought it isn’t convincing to me.” We can certainly think that an argument is good, in one of those senses, even though we don’t think that the conclusion is true, but that’s not what we mean by “good argument” here.

For the purposes of our philosophical studies, when I say that an argument is good, I mean that I think that the premises are true and that I think that the inferences are strong. Thinking both of those things, I should be inclined to accept the conclusion. Of course you might disagree with me. You might refuse to accept one of the argument’s premises, for instance, in which case you would think that the argument is bad and not be inclined to believe the ultimate conclusion on its basis. That’s fine. The point is that if you think that an argument is good then you should be inclined to believe the ultimate conclusion. If, later on, you find a problem with the argument or think that the argument is weaker than another argument for an incompatible conclusion, you can always change your mind.

The key points to remember are:

1) If you think that an argument is bad, you should neither accept nor reject the ultimate conclusion of the argument on that basis, but

2) If you think that an argument is good then you should be inclined to accept the conclusion on that basis, at least provisionally, and

3) If you’re faced with arguments for competing positions, and if the arguments for one side are better than the arguments for the other side, you should be inclined to accept the position supported by the stronger arguments, at least provisionally.

Reasonable people can disagree in their evaluation of an argument and so can disagree about what conclusions they accept, and the acceptance of an ultimate conclusion is never an irrevocable decision.
Zeno’s Paradox

Let’s play around with these idea some more by taking a look at Zeno’s Paradox.

Zeno, who is among the most notable pre-Socratic philosophers, was born around 490 BCE in what is now Italy. He’s most famous for his arguments against motion, which include the following:

“If motion is possible, then you can go from point A to point B. In order to go from point A to point B, you first need to go from A to the point half way between A and B. Call this point A2. Once at A2, in order to get to B, you first need to go from A2 to the point half way between A2 and B. Call this point A3. Once at A3, in order to get to B, you first need to go from A3 to the point half way between A3 and B. Call it A4, etc. It follows from this that in order to go from point A to point B, you need to traverse an infinite number of distances. But traversing any distance takes some amount of time. Thus, in order to go from point A to point B, you need to have an infinite amount of time to make the trip. But you don’t have an infinite amount of time to make the trip. Thus, you can’t go from point A to point B. Therefore motion is impossible.”

We haven’t seen an argument anywhere near this level of complexity, so let’s read it over again and I’ll make some comments in red as we go along.

“If motion is possible, then you can go from point A to point B. In order to go from point A to point B, you first need to go from A to the point half way between A and B. Call this point A2. Once at A2, in order to get to B, you first need to go from A2 to the point half way between A2 and B. Call this point A3. Once at A3, in order to get to B, you first need to go from A3 to the point half way between A3 and B. Call it A4, etc. It follows from this that in order to go from point A to point B, you need to traverse an infinite number of distances. (Catch that “It follows from this?” This is a conclusion indicator expression, so the idea “In order to go from point A to point B, you need to traverse an infinite number of distances,” must be a conclusion. It’s not the ultimate conclusion, though - that’s the last sentence – so it must be a subconclusion.) But traversing any distance takes some amount of time. (See the “But?” That’s an inference eraser. I’m not expecting the idea “traversing any distance takes some time” to be connected to the previous idea with an inference. There’s no arrow there. Maybe there will be a plus sign.) Thus, in order to go from point A to point B, you need to have an infinite amount of time to make the trip. (There’s another conclusion indicator expression, “Thus.” This tells me that “in order to go from Point A to Point B, you
need to have an infinite amount of time to make the trip, is a conclusion from things previously said. Since it’s not the ultimate conclusion, it’s got to be another subconclusion.) But you don’t have an infinite amount of time to make the trip. (And we have another “But.” Once again, then, I’m not expecting this idea to be connected to the previous one with an inference arrow. Perhaps a plus sign will join them instead.) Thus, you can’t go from point A to point B. (And here’s another “Thus,” a conclusion indicator expression assuring me that “you can’t go from point A to point B” is a subconclusion.) Therefore motion is impossible. (Finally we have it – the ultimate conclusion signaled with perhaps the most famous of all conclusion indicator expressions: “Therefore”)

When I make a list of the important ideas in the argument and construct the diagram, this is what we have: (I’ll include the inference indicator and inference eraser expressions in parentheses so you can see how they get transformed into arrows and plus signs.)

1. Motion is impossible.
2. If motion is possible, then you can go from point A to point B.
3. In order to go from point A to point B, you first need to go from A to the point half way between A and B. Call this point A2.
4. Once at A2, in order to get to B, you first need to go from A2 to the point half way between A2 and B. Call this point A3.
5. Once at A3, in order to get to B, you first need to go from A3 to the point half way point between A3 and B. Call it A4, etc.
6. In order to go from point A to point B, you need to traverse an infinite number of distances.
7. Traversing any distance takes some amount of time.
8. In order to go from point A to point B, you need to have an infinite amount of time to make the trip.
9. You don’t have an infinite amount of time to make the trip.
10. You can’t go from point A to point B.

Slick, is it not?

Take a moment to notice that the premises (2, 3, 4, 5, 7 and 9) don’t have arrows going to them but do have arrows going from them, that the ultimate conclusion (1) has an
arrow going to it but no arrows going from it, and that the subconclusions (6, 8 and 10) have arrows going to them and from them. We'll talk more about subconclusions later.

Reacting to Zeno’s Paradox

There are a number of reactions to Zeno’s Paradox. One of the most common is a sharply dismissive “That’s dumb!” This is an unfortunate response, however, in part because it’s difficult to interpret. The argument in Zeno’s Paradox isn’t dumb in any obvious respect, so what someone means when she says “That’s dumb!” can’t be “There’s a problem with this reasoning that anyone should be able to spot.” So what does someone mean when she says “That’s dumb!”? In part, at least, she probably means that the conclusion is clearly false, that clearly motion is possible. I have some sympathy with this. We certainly appear to experience motion, in some form, all the time, so it would take a pretty impressive argument to properly convince us that motion doesn’t exist. But Zeno thinks that he has provided us with this argument. Saying “That’s dumb!” sort of misses that point. Zeno has advanced an argument for a highly implausible conclusion. That argument stands as a challenge to us. We can decide not to accept the challenge on the grounds that we don’t feel up to it or don’t have enough time, but it’s a serious mistake to call the argument “dumb.”

Let’s suppose, then, that we choose to engage the argument. What can we say about it? It’s very tempting to say something on the order of, “I don’t believe the conclusion but the argument is good.” If we do say this, however, we can’t mean that the argument is good in the sense of “good” that we’ll be using in our study of philosophy. We might mean that argument is clever, that someone who didn’t know better might be taken in by it, or that we can’t find any particular problem in the reasoning, but we can’t mean that there is no problem – that the premises and inferences are all just fine – because if we did mean that then we’d be compelled to accept the conclusion, we’d be compelled to accept that motion is impossible, and we almost certainly aren’t willing to go that far.

Of course, you probably aren’t thinking that the argument is dumb, and you probably aren’t thinking that the premises and inferences are good. I would imagine that you’re thinking something on the order of, “I know that this argument is bad, because I know that the conclusion is false, but I’ll be darned if I can find the bad premise or inference.” That’s an admirably rational response. In light of the apparently false conclusion, we can be reasonably certain that something is amiss in the argument. Some premise is false or some inference is weak. Who cares if we can’t put our finger on it? We can simply say “I know that something’s going wrong with this argument, because the conclusion’s false, but I can’t at the moment tell you exactly what’s going wrong.”

(By the way, I can tell you what’s going wrong in the argument, if you’re curious. The problem is with inference B. It assumes that an infinite sum of finite quantities is always infinite, and that’s not true. If you add ½ + ¼ + 1/8 + 1/16 + 1/32 and so on, you approach 1 as a limit. And that’s exactly the situation we have in Zeno’s Paradox. Every number that we add is half as large as the previous number.)
In short, whenever we’re presented with an argument for a conclusion that we don’t believe, we have two choices:

1) we can accept the argument and change our mind about the conclusion, or

2) we can continue to think that the conclusion is false and assert that the argument is flawed. If we’re able to go on to articulate exactly where the problem lies, identifying the problematic premise or inference, so much the better, but if we can’t do this we must at least acknowledge that something is going wrong somewhere.