II.1 Arguments

PHIL101
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updated: 9/3/13 10:16 AM

In the preceding Section of the course, we introduced the Basic Picture of the philosopher. That picture included a division between a conceptual and a sensory realm. Recall, too, that the division between conceptual and sensory realms correlated with a division between two kinds of inquiry that we called rationalist on the one hand and empiricist on the other. The rationalist explores reality primarily by attention to the conceptual realm and the empiricist explores primarily by consideration of sense information. Reason is the primary tool of the rationalist and sensation is the primary tool of the empiricist.

Reason, we said, or conceptual thought, is the basic method of the rationalist. Reasoning takes a number of forms. One is the conceptual analysis of Section I: concepts are generally made up of further concepts, and one form that rationalist investigation of our world can take is the analysis of concepts, breaking them down to reveal their contents. A further important rationalist method in philosophy is argumentation. Whereas in conceptual analysis the reasoning process involves scrutiny of the structure within a given concept, argumentation involves relationships that one concept might bear to another.

In philosophy, as elsewhere in life, we frequently employ arguments intended to discover truth by appeals to the structure of the conceptual realm. In this lesson, we consider some of the basic features of these relationships – i.e., the basic form that argumentation takes and the criteria by which we evaluate those forms.

Arguments

The term, 'argument' is ordinarily used in either of two ways. As you are no doubt aware, we use the term to refer to certain sorts of dispute that we are prone to having with each other. We may *argue* about how to spend our money, about who was at fault in a car accident, and such arguments are often troubling or upsetting to us, as they frequently involve our needs, fears, and desires. But this is not the *philosophical* use of the term, argument.

In the *philosophical* sense of the term, an argument is a line of reasoning intended to establish a certain proposition as true. Such arguments involve acknowledging the truth of certain statements, called *premises*, and drawing from these premises one or more further statement, called a *conclusion*. We may thus define an argument in this sense as follows:

> An *argument* is a set of statements, one or more of which (premise/s) purport to establish the truth of another (conclusion).

Here are several examples of arguments:

> Argument A
> 1. All men are mortal.
> 2. <u>Socrates is a man.</u>
> 3. Socrates is mortal.

Argument B

>   1. In the past, the sun has risen every day.
>   2. Tomorrow, the sun will rise.

Argument C

>   1. All goddesses are female.
>   2. Socrates is a goddess.
>   3. Socrates is female.

These arguments have been rendered in what is called "standard form." In standard form, the premises are listed first, followed by the conclusion of the argument. A line separates the premises from the conclusion. The lines of the argument are numbered to facilitate reference to them. Note that an argument can have as few as one premise; there is no upper limit on the number of premises an argument can have.

Evaluating Arguments

As the word suggests, the evaluation of an argument is an indication of its value, its quality, its worth. There are two forms of value involved in evaluating arguments. The first concerns the "truth-value" of the argument's premises and the second concerns the logical relationship between the premises and the argument's conclusion. We will consider these in order.

Truth-Value

Our first concern lies with the truth of the premises. If the premises of an argument are not true, then the argument lacks the basis on which its conclusion is offered as true. For example, in Argument A, one is saying something like this: since *it's true* that (1) all men are mortal, and since *it's true* that (2) Socrates is a man, therefore, (3) Socrates must be mortal, himself. If either of the premises, (1) or (2) is false, then the argument fails to provide a basis for claiming that (3) is true. Thus, one task in evaluating the quality of an argument is the task of establishing the truth-value of each of the argument's premises.

There are two truth-values that a statement can have: true and false. So, our question is whether the premises of an argument are true or false. In Arguments A and B, the premises are true.[1] And so, in this respect, these two arguments are "good" arguments: their premises are true. In argument C, however, one premise is false. Goddesses, as we ordinarily understand them, are female in something like the sense that human women are female. So, the first premise is true. But Socrates, as we are using that name, is not a goddess, but simply a man. So, in respect of the truth-value of its premises, Argument C is a "bad" argument. Since one of its premises is false, the argument provides us no reason to think that its conclusion is true. For, again, in an argument, as philosophers use the term, certain statements (the premises) are offered as reason to think another (the conclusion) is true. If one or more of the premises is false, we lack the reason to think the conclusion true.

Logical Quality

The second measure of the quality of an argument concerns the argument's logical structure. The logical structure of an argument facilitates the inference from premises to conclusion. Our question here is, supposing the premises of the argument to be true, what is then the likelihood of

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[1] Supposing, that is, that 'Socrates' refers to the ancient Greek philosopher, Plato's mentor, who was executed by the Athenian assembly in 399BCE. Let's stipulate that this is how we are using this name, and not as the name, say, of a dog or cat.

the truth of the argument's conclusion? *If* the premises of the argument were true, would the conclusion be true? As you can see in Argument A, the truth of premises (1) and (2) guarantee the truth of conclusion (3). Since Socrates *is* a man, and since all men *are* mortal, therefore, Socrates must be himself mortal. Argument A is a "good" argument in respect of its logical structure.

Consider again Argument C. As perhaps you can see, this argument has the same logical structure as does Argument A. This means that if its premises were all true, then so too would be its conclusion. If it were true that Socrates were a goddess, then premise (2) would be true, and since premise (1) is also true, that would mean that the conclusion (3) would have to be true. So, in this respect, Argument C is also a "good" argument, even though it is not "good" in respect of the truth-value of its premises.

With Argument B, a complication arises. Argument B is a "good" argument in respect of logical structure. The fact that the sun has always risen in the past does give us some reason for thinking that it will rise again tomorrow. The truth of the argument's premise, then, makes likely the truth of its conclusion. On the other hand, the logic of this argument could be stronger. It is possible, despite all of the sunrises of the past, that tomorrow's sun not rise. We must think, then, of the logical quality of arguments as falling along a range of values. This range will have a maximal value and a minimal value. At its maximum, the truth of the argument's premises will *guarantee* the truth of the argument's conclusion. This is the case with Arguments A and C. At the other end of the range, at its minimum, the premises of an argument will offer *no support* for the truth of the argument's conclusion. You might think about what an example of such an argument would be.

Here is a graphic illustrating the range of logical strength:

weaker   stronger

no support   valid

Because of the significance of these ideas, we have a special terminology for employing them.

- Strong logic: an argument the truth of whose premises makes likely the truth of its conclusion
- Weak logic: an argument the truth of whose premises does not make likely the truth of its conclusion
- Valid logic: an argument the truth of whose premises makes certain the truth of its conclusion
- Invalid logic: an argument the truth of whose premises does not make certain the truth of its conclusion

Validity is a special case of strength: all valid arguments are strong arguments. But, as in the case of Argument B, not all invalid arguments are weak arguments. Indeed, many of our arguments are perfectly strong, logically speaking, even though the truth of their premises doesn't *guarantee* the truth of their conclusions. In many situations, we can be satisfied with the weaker, "makes likely."

With these ways of evaluating the logic of an argument, we can put the two standards of evaluation together to give us these two forms of good argument:

- Sound argument: a logically valid argument with true premises
- Cogent argument: a logically strong argument with true premises

Note that a sound argument will also be cogent, but the reverse will not necessarily be true.

A goal of good philosophy is good argumentation. The above measures provide us a means of determining when we encounter it. Be aware, however, that it may not always be a simple matter to determine the truth of a philosophically important premise. Many will require further argumentation, and similarly for the further arguments.