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Being Careful With Paralogisms: Pedagogical Concerns About Informal Fallacies

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Introduction

This paper takes the form of a cautionary tale for those who teach informal fallacies. The worry is that students in critical thinking and introductory logic courses often misunderstand what does and does not count as a fallacy because they "overlearn" the fallacies presented to them. In other words, after taking a course that covers informal fallacies, students often start to see fallacies where none exist; they confuse plausible arguments with fallacious ones. My evidence for this claim is very much anecdotal, but I assume that other instructors have had experiences similar to mine. I have noticed, in teaching students who have taken introductory courses in logic and critical thinking, or students who have been given a crash course in logic at the beginning of my own courses, that there is a tendency to reject arguments for questionable reasons. These reasons would not have occurred to students if they had not been given a list of fallacies to avoid at all costs. That is not to say, of course, that fallacies should not be taught. Rather, the conclusion to be drawn is that instructors and textbook authors ought to be very careful in how they present informal fallacies.[1]

It is quite common (though again my evidence is anecdotal) for instructors and textbooks to present students with a definition of a particular fallacy and then to continue by providing clear examples wherein the fallacy is committed. Then the next fallacy is presented, and so on. I suggest that what is missing in this method of presentation are examples where the fallacy in question is *not* committed, but where it might be tempting to think that it is. The reason for teaching informal fallacies in the first place is that arguments that are fallacious in particular ways might *seem* like good arguments unless one is versed in the ways that arguments can go wrong. But the same can be said of the fallacies themselves; sometimes arguments might seem to commit a fallacy when they in fact do not. So again, my very modest proposal is that teachers of informal fallacies should be careful to provide examples of arguments which might appear to commit a fallacy but really don't. This method should prevent students from overlearning certain fallacies. In what follows I will catalog some informal fallacies which I have found to be pedagogically problematic and provide examples of how students sometimes misapply those fallacies to legitimate arguments. All of the examples are real-life cases taken from my own teaching experience, and I trust that some of them will strike a chord with other instructors. The claims I make about what does and does not count as a fallacy are likely to be very obvious to readers of this paper, but the point is that they are not always so obvious to students.

Ad Populum

Typically the ad populum fallacy is defined like this:

Everyone (or nearly everyone) thinks p is true.

_____

P is true.

This seems like a very sensible way to present the fallacy, and furthermore making use of this form of argument is usually very suspect.[2] For example, some people are inclined to believe that some sort of deity must exist on the basis of an argument which goes something like this:

Throughout history and in almost every culture, most people have believed that God exists.

_____

God exists.

This argument clearly commits the ad populum fallacy and it is clear that the premise does not adequately support the conclusion. But consider socially constructed facts such as facts about money. Suppose someone argues in the following way:

Everyone (or nearly everyone) thinks this piece of paper (which depicts a past leader and which is issued by the government) is worth $5.

_____

This piece of paper is indeed worth $5.

Now this argument is not *formally* valid. There is a suppressed premise having to do with the nature of money and its value. The worry, however, is that someone who has been taught the ad populum fallacy might disregard the argument altogether. But there seems to be pretty good reason to accept that the argument is *semantically* valid (and hence *informally* strong). Arguably, we should accept that it is semantically valid for the same reason that we should accept that the following argument is semantically valid:

Penelope is someone's sister.

_____

Penelope is female.

For this reason, students should be shown how and why some arguments that may at first appear to commit the ad populum fallacy do not.

The Naturalistic Fallacy

The naturalistic fallacy is committed when one confuses the way things are with the way they ought to be. In my experience it rears its ugly head in introductory classes quite often when the discussion turns to issues in applied ethics. For example, when confronted with a utilitarian

argument for the claim that vegetarianism is morally obligatory, many students reply with a counter-argument very much like this:

(A)
Unlike some other animals, humans are born with a digestive systems suitable to eating meat.
Unlike some other animals, humans have teeth suitable to eating meat.
Most humans are quite naturally compelled to eat meat.

It is morally permissible for humans to eat meat.

This attempt to derive moral permissibility from the status quo is a good example of the naturalistic fallacy. The reasoning used here is certainly suspect. Still, I am inclined to think that my students are on to something when they offer this argument. What they are on to is the ought-implies-can principle. They reason that if humans are naturally meat eaters, then they can't help but be meat eaters. Therefore, given the ought-implies-can principle, it is nonsensical to say that it is wrong for humans to eat meat. Their mistake is not, strictly speaking, equating what is the case with what ought to be the case. That is, they are not under the impression that it is OK for humans to eat meat just because humans do in fact eat meat. Rather, their mistake is to think that the premises provide adequate evidence for the claim that humans are incapable of refraining from eating meat. That this is a mistake is shown by the fact that the available empirical evidence establishes conclusively that humans can refrain from eating meat, even if all the premises of this argument are true.

Given this perceived connection between reasoning which appears to commit the naturalistic fallacy and the ought-implies-can principle, it is perhaps not surprising that after being introduced to the naturalistic fallacy, people might be inclined to think that any argument which makes use of the ought-implies-can principle also commits the naturalistic fallacy. More than one of my students has suggested that if the above argument is fallacious, then so is this argument:

(B)
Some wild animals have digestive systems suitable to eating meat.
Some wild animals have teeth suitable to eating meat.
These same animals are quite naturally compelled to eat meat.

It is morally permissible for these wild animals to eat meat.

My students then proceed to tell me that it is ridiculous to think that this argument is fallacious because, of course, it is not morally wrong for a wild carnivore to eat other animals for just the kinds of reasons stated in the premises. So, the naturalistic fallacy must not be a true fallacy.

I suggest that what is going on here is that students are confusing two very different senses in which some state of affairs might be "natural." A state of affairs might be natural insofar as it is the status quo – the historically normal way for things to be. To try to derive any kind of moral norms from this sense of "natural" is to commit the naturalistic fallacy. But a state of affairs might be natural in a different sense – natural insofar as it is the way things *must* be, not merely how things happen to be. Assuming the truth of the ought-implies-can principle, it seems like a good idea to derive moral norms from *this* sense of "natural." Doing so does not

involve committing the naturalistic fallacy. For if a state of affairs is natural in the second sense, and if the ought-implies-can principle is true, then it follows that there can be no moral obligation to prevent that state of affairs from obtaining. With respect to arguments (A) and (B) above, it seems reasonable to suppose that the third premise in argument (A) is true only if it is taken to mean that human meat eating is natural in the first sense of "natural." (If this premise were stated with the second sense of "natural" in mind, then it is easily refuted by pointing to the fact that there are human vegetarians.) But the third premise in argument (B) is arguably true, assuming the second sense of "natural." When understood in this way, (A) fails to show that human meat eating is morally permissible, but (B) is successful in showing that it is morally permissible (or amoral) for a lion to eat an antelope.

It should be noted that some philosophers question the truth of the ought-implies-can principle. But this view is highly controversial and presumably we do not want to say that to make use of the principle is to commit a fallacy. The upshot is that in presenting the naturalistic fallacy, instructors should make it very clear that the following two principles are not identical:

(1) What you ought to do is not always identical with what you do in fact.
(2) Anything that you ought to do is something that you are able to do in fact.

To deny (1) is to commit the naturalistic fallacy. To deny (2) is to adopt a rather controversial view of ethics. At first glance it may be difficult to see how or why anyone might confuse (1) and (2), but I suggest that students sometimes do just that. What I hope to have shown in this section is that this confusion is not so inscrutable and consequently that instructors can and should make efforts to prevent it.

Appeal to Authority

Arguments which rely too heavily on the testimony of others are fallacious. Nonetheless, the appeal to authority fallacy can be overlearned. After being told about this fallacy, students might be tempted to dismiss any argument the premises of which rely on expert testimony. Usually textbooks are very clear that there is a difference between the two kinds of argument, but still it is advisable for instructors to remind students that not *all* appeals to expert testimony constitute illegitimate appeals to authority.[3] When there is independent reason to think that a particular authority is in a good position to know something, i.e., when there is good reason to think that the authority in question really is an expert *on the issue under consideration*, then it seems reasonable to use that authority's testimony in order to support the conclusion of an argument. As with the other fallacies discussed, the use of examples is a very effective way of demonstrating the difference between a fallacious appeal to authority and an unproblematic appeal to expert knowledge. Consider the following pair of arguments.

(A)
Einstein was a genius and much of what he said suggested that he believed in God.

God probably exists.

(B)
Many physicists have reported that their experiments suggest that Einstein's General Theory of Relativity can be used repeatedly and consistently to make very accurate predictions.

Einstein's General Theory of Relativity is probably correct.

Argument (A) is clearly problematic (yet surprisingly common in my experience). On the other hand, the single premise of argument (B) does seem to lend some support to the conclusion. Students should be made to appreciate the difference between the two appeals to expert testimony. In short, argument (A) is fallacious because there is very little reason to think that Einstein was really in a position to know whether or not there is a god. Argument (B) does not have the same kind of problem, because those physicists who have conducted experiments relevant to the General Theory of Relativity are presumably in a good position to know about its predictive power.

Ad Hominem

Like the appeal to authority fallacy, the ad hominem fallacy is usually presented by textbook authors with an eye toward preventing any confusion between it and legitimate argument forms. But again, it is well worth an instructor's time to make very explicit the difference between fallacious ad hominem arguments and other, seemingly similar arguments. And, again, it is helpful to provide examples. It should be made clear to students that there is a difference between dismissing an argument *simply* because the argument is presented by so-and-so, and being very skeptical of the truth of the premises of an argument because they are presented by an untrustworthy source. So, for example, suppose a lawyer for a tobacco company gives an argument the premises of which rely on studies conducted by the company he represents and the conclusion of which is that cigarettes are not carcinogenic. To question the validity or inductive strength of the argument solely on the basis that it is presented by a big tobacco lawyer is to commit the ad hominem fallacy. But to question the truth of the premises seems perfectly reasonable, given that the lawyer and the company he represents might have a fairly obvious ulterior motive to mislead or lie about the effects of tobacco use. When evaluating arguments, it is fine to consider the party that presents them, as long as one pays attention to those characteristics of the party that are truly relevant to the worth of the argument. Expertise with respect to the issue under consideration and ulterior motives are two such characteristics.

Tu Quoque

This often neglected fallacy (which is sometimes said to be a variety of the ad hominem) is committed when one attempts to answer an objection by applying the objection to the arguments or views of the objector. If I suggest that my view is not subject to your criticism because your own view is subject to the same criticism, then I have committed the tu quoque or "you also" fallacy.

The tu quoque fallacy is fairly common, and it seems like a good idea to warn students about it. But it can be overlearned. The danger is that students will come to think that it is

problematic to reject a self-refuting objection. But, of course, doing so is not to commit a fallacy. Suppose the thoroughgoing relativist criticizes the objectivist's view, saying that objectivism with respect to truth must be false because truth is relative to what individuals believe. In this situation it is perfectly reasonable and not at all fallacious for the objectivist to respond by pointing out that if the relativist's rationale is right, then the objection itself falters. Or, at the very least, the relativist's objection just amounts to the claim that she personally rejects an objective view of truth. When the relativist proclaims that nothing is true, the objectivist has an easy reply: the relativist's proclamation amounts to the claim that it is true that nothing is true. Therefore, the relativist's objection seems to be subject to itself. Surely it is legitimate for the objectivist to dismiss a naive relativist's criticism on these grounds alone. Again, students should be cautioned that it might be tempting to see a fallacy where there isn't one.

Question Begging

There are two similar yet distinct ways to beg the question. The first, most obvious way is to offer a circular argument. To beg the question in this way is to explicitly assume the truth of the conclusion of an argument in one of the premises. In my experience students do not typically have much difficulty in determining whether an argument is question begging in this way. Perhaps this is because one need not look at the bigger context in which an argument is presented in order to determine whether it is circular. It is possible to appreciate the circularity of an argument by considering it in isolation.

The second, less obvious and more pedagogically problematic form of question begging involves begging the question *against a particular position*. To beg the question in this way is not necessarily to offer a circular argument. Rather, it is to offer an argument where at least one of the premises is such that it is (a) likely to be rejected by one's opponent and (b) not given any independent support. In determining whether an argument is question begging in this sense, it is obviously important to take into account the context in which the argument is presented. Furthermore, it is not always easy to determine whether a premise is likely to be rejected by one's opponent, and it is even more difficult to decide on a set of standards for deciding whether a premise is in need of further support or may instead merely be assumed true. Questions about who has the burden of proof are likely to be raised, and such questions complicate the matter considerably. For these reasons, deciding whether an argument is problematically question begging can be extraordinarily difficult even for experts well versed in logic and critical thinking. It should come as no surprise, then, that it poses a problem for students in introductory classes as well; perhaps argumentation and philosophical debate is, by its very nature, problematic in this regard.

Still, it seems that some students approach the issue of question begging arguments in a very dubious manner. One strategy often employed, especially when students present their own arguments in written assignments, is to simply ignore the issue of question begging altogether. The other strategy is to wheel out claims about question begging at every opportunity with the air of having played a trump. It is not clear whether these strategies are adopted due to a true misunderstanding of what constitutes a question begging argument or merely for the sake of convenience, but regardless it is a good idea for teachers to warn against both methods of argumentation.

The strategy of ignoring concerns about question begging is best seen, I think, by considering the way in which students often approach the issue of whether abortion is morally permissible. By far the most common pro-life argument goes something like this:

A fetus is an innocent person.
It is wrong to kill an innocent person.
Abortion constitutes killing a fetus.

_____
Abortion is wrong.

The pro-choice argument very often takes this form:

It is morally permissible for persons to do with their bodies what they please.
Women are persons.
When a woman has an abortion, she is doing with her body what she pleases.

_____
It is morally permissible for a woman to have an abortion

Now, given that these arguments are presented in the context of the abortion debate, both are clearly problematic in that they are question begging. In both arguments the first premise is very likely to be rejected by the other party to the debate. The pro-choice advocate is unlikely, from the very beginning, to deem fetuses persons. The pro-life advocate is unlikely, from the very beginning, to think that it is morally permissible for a person to do *anything* she wants with her body. It is remarkable how often these facts are ignored (and not only by students in philosophy classes) in the presentation of both arguments.

I take it to be fairly obvious that these arguments are terribly question begging, and I am inclined to think that the vast majority of critical thinking instructors would agree that they are. I present them only because they demonstrate why it is important to warn students against *both* kinds of question begging. It is not enough to warn students against making circular arguments. It is also necessary to show them why arguments like these are not going to persuade anyone who does not already agree with the conclusions. It is perhaps unfortunate that arguments which assume what they are meant to prove as well as arguments which make use of problematic assumptions in the context of a debate are both referred to as question begging arguments. For the two kinds of question begging are really two different fallacies, and there is a worry that teachers will present only one of them and neglect to mention the other.

Unfortunately, however, presenting the context-relative form of question begging can come at a steep price if an instructor is not very careful. For this kind of question begging is sometimes overlearned. *Any* argument begs the question against *some* view, whether or not it is a view anyone actually holds. The reason is well known: justifications must come to an end somewhere and hence it is not possible to justify every premise in every argument. Some students, realizing this, like to "refute" any argument whose conclusion they wish to avoid by claiming that they reject one of the premises and hence that the argument is question begging. When people adopt this strategy, it seems pointless to try to convince them of anything by way of argument, and hence the very reason for teaching logic, critical thinking, and fallacies is undermined.

This strategy is clearly not intellectually honest. It seems everyone is willing to accept more than a few propositions without justification. It is precisely this point which instructors should make when introducing the concept of question begging arguments. It is important to remind students why logic, critical thinking, and fallacies are important to know. It is important to remind them that the whole point of presenting and evaluating arguments in the first place is that arguments can be used to convince people of certain views. Carefully considering the worth of an argument is not merely a game people engage in. Or, at least, it shouldn't be. If you adopt the strategy of deeming all arguments question begging, you are in effect saying that no argument can convince you of anything. Presumably, not many people are going to want to defend this view. If a student does honestly take this stance, then there is very little left to say. But otherwise it seems reasonable to tell students that, when it comes to the fallacy of question begging, they are on the honor system: they should only demand justification for those premises that they honestly doubt or reject. This seems to be the only proper way for anyone to approach the issue of context-relative question begging, and it is advisable to make students aware of the unhappy consequences associated with approaching it in any other way.

Slippery Slope

Unfortunately it is sometimes thought that all slippery slope arguments are fallacious. I suggest that there are non-fallacious as well as fallacious slippery slope arguments, and hence just because an argument takes the form of a slippery slope, that is not enough to conclude that it is problematic. All slippery slope arguments rely on the repeated use of conditionals. Fallacious slippery slope arguments rely on unjustified conditionals, whereas non-fallacious slippery slope arguments rely on warranted conditionals. Usually the relevant conditionals go unstated, so it is very often difficult to determine which conditionals are needed in order for the argument to go through. To determine whether a slippery slope argument is fallacious, it is sometimes helpful to restate it in the form of a chain argument which makes use of repeated applications of modus ponens. In principle, any slippery slope argument can be restated so that it looks something like this:

A
If A then B
If B then C
If C then D

_____
D

Such an argument is clearly valid. So determining whether it is sound or not consists of determining whether the premises are true. But usually this is easier said than done. The reason an argument might be presented vaguely as a slippery slope instead of as an explicit chain argument is that it relies on a great many conditionals. And, again, it is sometimes difficult to determine which conditionals are required for the original slippery slope argument to go through. Consequently, it is often difficult to reconstruct a slippery slope argument as an explicit chain argument and hence difficult to determine whether all of the required conditionals are true or justified. Still, it seems clear that some arguments deemed slippery slopes could be put in the

form of a sound chain argument while at the same time preserving the basic content of the original argument. Therefore, not all arguments deemed slippery slopes are fallacious. At the very least, it is worth bringing this point to students' attention.

One way to try to determine whether a slippery slope argument is fallacious is to ask whether there is a single principle which is supposed to serve as the justification for the many (and usually unstated) conditionals on which the argument relies. If it is likely that the argument relies on such an underlying principle, then we should ask whether that principle is justified, whether it really supports the premises of the argument, and whether it is applied consistently throughout the argument. To see how this method works, consider the following argument, often given by American gun control opponents:[4]

If the government is allowed to outlaw handguns, it will soon outlaw butcher knives.
It would be very undesirable for the government to outlaw butcher knives and hence this should not be allowed this to happen.

The government should not be allowed to outlaw handguns.

It seems reasonable to call this a slippery slope argument. But is it fallaciously slippery? The slope is suggested by the first premise. This conditional certainly seems terribly implausible, in part because it hints at and relies on several unstated conditionals (e.g., If the government is allowed to outlaw handguns then it will also outlaw shotguns; If the government outlaws shotguns then it will outlaw rifles; If the government outlaws rifles then it will outlaw _____; If the government outlaws _____ then it will outlaw butcher knives.) It is very questionable whether any of these conditionals are true. But the idea seems to be that there is an underlying principle that is itself justified and which justifies each of these conditionals, thus conferring justification on the first premise. So to determine whether this argument is fallacious, we need to determine what that principle is, whether it really is justified, whether it really warrants all of the unstated conditionals, and whether it is applied consistently. Some candidates for the underlying principle include:

(1) The rationale for outlawing handguns is that anything which might be used as a weapon should be outlawed.
(2) The rationale for outlawing handguns is that anything which is specifically designed to be used to kill people should be outlawed.
(3) The rationale for outlawing handguns is that handguns are very often used in violent crimes and hence outlawing them is likely to cause the rate of violent crimes to go down.

Principle (1) seems to fail the justification test. It is not itself plausible. Note, however, that this principle would, if true, confer warrant on all of the unstated conditionals and hence on the first premise as well. Principle (2) is perhaps more plausible, but it cannot confer warrant on all of the unstated conditionals. It is impossible to use principle (2) to justify the claim that government is likely to outlaw butcher knives. Principle (3), because it refers to the dangers associated with handguns in particular, is also very unlikely to confer warrant on all of the unstated conditionals.

It seems that it would be very difficult to come up with an underlying principle for this argument that would meet all of our criteria. So it is wise to deem this particular slippery slope

argument fallacious. But consider the kinds of arguments associated with the well-known sorites paradoxes. Consider, for example, this argument:

If one grain of sand does not constitute a pile of sand, then neither do 50 zillion grains of sand.
If 50 zillion grains of sand do not constitute a pile of sand, then it is impossible to have a pile of sand.
One grain of sand does not constitute a pile of sand.

A pile of sand is impossible.

This argument too can be viewed as a slippery slope. Again the slope is suggested by the first premise, and again this premise relies on several (actually, 50 zillion) unstated premises. But unlike the gun control opponent's argument, this slippery slope seems to rely on a principle that meets all the criteria mentioned above. The principle is this:

If n pieces of sand does not constitute a pile of sand, then neither does n + 1 pieces of sand.

This statement is not entirely uncontroversial, but it is nonetheless fairly reasonable on its face. And if true it confers warrant on each of the 50 zillion unstated conditionals in exactly the same way, thus conferring warrant on the first premise of the argument. So it passes our underlying-principle test. Hence it is at least plausible to suppose that the sorites argument is an example of a non-fallacious slippery slope.

When introducing the idea of a slippery slope to students, it may not be necessary to give the kind of detailed presentation I have provided here. But if I am correct, then it is probably a good idea to emphasize that not all slippery slope arguments are fallacious. Otherwise, there is a danger that students will see a fallacy where there isn't one.

Conclusion

The reason that we teach fallacies is that fallacious arguments can sometimes *look* like good arguments. We don't want students to accept the conclusion of a fallacious argument, so we show them the ways in which seemingly good arguments can go wrong. If what I have said here is correct, then the same kinds of considerations hold for the fallacies themselves; sometimes a decent argument can *look* like a fallacious one. So it is a good idea to warn students against the misapplication of certain fallacies. I suggest that the best way to do this is to provide examples, not only of arguments that do commit the fallacies, but also of arguments that do not (but might appear to).

Notes

[1] In this paper I will not cite those textbooks which I think do a particularly good or bad job of presenting informal fallacies since my primary concern has to do with how fallacies are taught by instructors in the classroom. Suffice it to say that many critical thinking and introductory logic textbooks do not mention the ways in which a non-fallacious argument might appear to be fallacious. For the reasons give below, I think they should.

[2] It should be noted that the ad populum fallacy is often defined as an appeal to emotion. I am concerned here with a slightly different fallacy which is also sometimes called the ad populum fallacy.

[3] To avoid confusion, some textbook authors and instructors refer to the appeal to inappropriate authority – the ad verecundiam fallacy, which is committed when an appeal is made to someone who does not truly have any authority with respect to the issue under consideration.

[4] To be fair, the slippery slope arguments offered by gun control opponents are not usually so implausible as this one. I have chosen to use an argument with an outrageous first premise for the sake of illustration.