

For this assignment you may work individually or as a pair (but not as a larger group). If you work in a pair, only one of you should submit your solution, and the file should contain names and email PIDs for both of you. Prepare your answers to the following questions in a plain ASCII text file or a Word document (doc or docx). Submit your file to the Curator system by the posted deadline for this assignment. No late submissions will be accepted.

You will submit your answers to the Curator System (www.cs.vt.edu/curator) under the heading OOC02.

Exposition

A logical *fallacy* is an argument, often plausible, that uses erroneous inferences to derive a conclusion that does not follow validly from the argument's premises. (Note that the conclusion may be either true or false; the point is that it does not follow.)

There are common categories of fallacies, logical and otherwise; you can read about a number of them via the Wikipedia article on Fallacy. As always, be sure to not take the accuracy and completeness of any web-based discussion for granted, but rather consider the assertions there carefully and decide whether or not they are reasonable.

A type of fallacy you will commonly encounter in public discourse is the *appeal to consequences*. For example, in rejecting the appeal of the convictions of six defendants in the British courts, an English jurist included the following statement in his ruling:

If the six men win, it will mean that the police are guilty of perjury, that they are guilty of violence and threats, that the confessions were invented and improperly admitted in evidence and the convictions were erroneous... This is such an appalling vista that every sensible person in the land would say that it cannot be right that these actions should go any further.

Some implied conclusions of the quoted paragraph are that the men are guilty and that there were no violations of due process in the handling of their cases. Note how the argument does not ever directly address those issues. There is no argument that the police were not guilty of perjury, no argument that the confessions were not invented. Rather, the argument is that the consequences of declaring the convictions to be invalid would be so undesirable that the convictions must be allowed to stand.

Now, one may argue in some circumstances that it is better to follow a less-than-ethical course of action in order to prevent even worse things from occurring. (Whether we should accept such an argument is a matter of personal conviction, and I am taking no position on that here.)

However... none of that has anything to do with the issue of the truth of the conclusion that is reached. The quoted statement provides no argument whatsoever regarding the truth of the assertion that the police committed perjury. The quoted statement simply uses logically irrelevant "noise" to distract the reader from the absence of logical content.

Some types of fallacies involve the application of an invalid rule of inference, or an incorrect application of logical operations, in a more obvious way than in the example above. For example:

Bob Murch, spirit board collector: "There's been thousands of years of accounts of ghosts and hauntings, and if those are true, you know, surely a spirit board can work."

Penn Jillette: "So, if those aren't true, a spirit board can't work? Cool!"

Source: Penn & Teller, "Ouija Boards/Near Death Experiences", *B.S.!*

Stripped of excess verbiage, Murch's statement is a simple implication: "If the thousands of years of accounts of ghosts and hauntings are true, then a spirit board can work". Penn Jillette's reply can be fairly recouched as: "Suppose those accounts are not true. Then a spirit board can't work". But, that is simply invalid logic. From "if P then Q" and "not P", we cannot infer anything about the truth or falsity of Q. This is most commonly called *denying the antecedent*.

Assignment

Each of the questions on this assignment asks you to find an example of a particular kind of fallacy on the web. News articles, letters to the editor, and blogs (was it even necessary to say that?) are examples of good places to look. The only restriction is that you may not use websites that are intended discuss and to give examples of fallacies. You may also not use the course notes. For each question, you must give the exact URL of the site from which you took your example, and you must write one to three sentences explaining clearly how your example fits the specified fallacy.

Since I'm not going to describe other kinds of fallacies here, you should look up and carefully read discussions of the kinds of fallacies I refer to below. Here are a few sites that are particularly good:

- the Wikipedia article on Fallacy, and the List of Fallacies linked from there
- <http://www.logicalfallacies.info/>
- <http://www.unc.edu/depts/wcweb/handouts/fallacies.html>
- <http://www.fallacyfiles.org/>

Note that it is very unlikely that you will find neatly-labeled examples at allowed websites. A major goal of this assignment is for you to practice recognizing fallacies "in the wild".

1. Give an example of an *affirming the consequent* fallacy. (That is, from "if P then Q" and "Q", we infer "P".)
2. Give an example of a *begging the question* fallacy. (That is, the argument assumes the truth of the desired conclusion.)
3. Give an example of a *post hoc ergo propter hoc* fallacy. (That is, A occurs after B, so therefore B must cause A.)
4. Give an example of a *cum hoc ergo propter hoc* fallacy. (That is, there is a correlation between A and B, so therefore there must be a causal relationship between A and B.)
5. Give an example of an *appeal to law* fallacy. (That is, the law says we must do A, so therefore A must be a good thing to do.)