Philosophy 101: Introduction to Philosophy, Queens College, Fall 2005
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Lecture Notes, September 7

I. Valid and Invalid Arguments

As I mentioned last week, in a Valid Deductive Argument, if the premises are true, the conclusion must be true.
This means that if the conclusion of a valid argument is false, then one of the premises must also be false.
We will use this result to analyze some of the arguments of the philosophers we study.
We considered a few valid forms, like modus ponens and disjunctive syllogism.

There are also invalid argument forms.
These are fallacies, logical errors.
The fallacy of denying the antecedent:
1. If A then B.
2. Not-A.
So, not-B.

The fallacy of affirming the consequent:
1. If A then B.
2. B.
So, A.

In an invalid argument, the conclusion can be false, and the premises true.

II. Reductio arguments

Another valid argument form is the reductio.
It is based on the basic logical principle called non-contradiction (or, sometimes, contradiction).
The law of non-contradiction says that a statement can not be both true and false.
(Actually, it says that a statement and its negation can not both be true, which is, for our purposes, the same thing.)

The form of a reductio argument:
1.Assume the negation of something.
2. Derive a contradiction (p and not-p), or other repugnant conclusion.
3. Conclude the affirmative of your assumption.

Examples:
If everyone may do as (s)he pleases, then we must allow murder.
If we legalize drugs, then violent crime will increase, or productivity will decrease.
If wee do not go to war in Iraq, then Saddam Hussein will use his weapons of mass destruction against us.

III. Soundness vs validity

Validity concerns form of argument.
'p and not-p' is invalid, no matter what assertion we substitute for 'p'.
The first step in evaluating an argument is to determine whether the premises entail the conclusion.
The second step is to see if the premises are sound (i.e. true).

Example A):
1. If AIDS is harmless then we need not take precaution against it.
2. AIDS is harmless.
So, we need not take precautions against AIDS.

Example B):
1. Any disease which threatens many lives is worth our concern.
2. Mumps is worth our concern.
So, mumps threatens many lives.

A) and B) are both bad arguments, but for different reasons.
A) is valid, passes the first test.
B) is invalid, we do not have to go to the second step.
A) is unsound - one of the premises is false.

Much of what I will do in this class will be to introduce an argument in this form.
If we do not like the conclusion, we will try to discover which of the premises are wrong.

IV. Another logical property: transitivity

Transitivity holds for =, <, >, is

For example:
1. (1+1) + (1+1) = 2 +2
2. 2 + 2 = 4
So, (1+1) + (1+1) =4

Also:
1. Theodore Geysel is Dr. Seuss.
2. Dr. Seuss is the writer of The Cat in the Hat.
3. The Cat in the Hat is a great book.
So, TG is the writer of a great book.

Now, consider:
1. God is love.
2. Love is blind.
3. Ray Charles is blind.
Som Ray Charles is God.

What's wrong with this argument?
We discussed various reasons the argument is invalid.

V. Starting Descartes

Read ¶1 of Meditation 1.
Descartes wants something “firm and lasting in the sciences”.
What is science?
We can interpret ‘science’ broadly, as covering all legitimate knowledge.
We can also see some of his concerns about falsehoods he learned in his youth as applying to a narrower, more sophisticated interpretation of ‘science’.
This requires a bit of historical background.