Philosophy 101
(2/24/11)

- **Solutions to HW #2 posted (study them!)**

- **HW #3 due *next* Thursday**

- **Quiz #2 *Today* — last 30 minutes** (on *rational belief*)

- **Today: Chapter 3 finalé, and chapter 4 intro.**

  - **Brief Review of Chapter 3 Concepts**
  - **Some Q&A's about validity, cogency, *etc.***

  - **Chapter 4 — *Strong* Arguments**
    - **Combining the concepts from chapters 2 & 3 to yield an account of *argument strength*.**

- **Well-formed *vs* Ill-Formed Arguments**

- Here is a summary of the key definition of this section:

D3.1b: An argument is *valid* if and only the argument follows a pattern such that it is impossible for any argument following that pattern to have true premises and a false conclusion.

D3.2b: An argument is *cogent* if and only if it is not valid but it follows a pattern such that all arguments following that pattern have a conclusion that is probably true if the premises are true.

D3.3: An argument is *ill-formed* if and only if it is neither valid nor cogent.

D3.4: An argument is *well-formed* if and only if it is either valid or cogent.

- **Well-formed *vs* Ill-Formed Arguments** (Q's)
  - Suppose that an argument is ill-formed. What can you conclude about the truth value of its conclusion?

  - Suppose that an argument is valid. What can you conclude about the truth value of its conclusion?

  - Suppose that an argument is valid and that its conclusion is false and that the first of its two premises is true. What can you conclude about the truth value of its second premise?

  - Suppose an argument is cogent and its conclusion is true. What can you conclude about the truth value of its premises?

  - Suppose an argument is valid and has true premises. What can you conclude about the truth value of its conclusion?

- **Well-formed *vs* Ill-Formed Arguments**
  - Suppose that an argument is valid and that its conclusion is false and that the first of its two premises is true. What can you conclude about the truth value of its second premise?
1. All valid arguments with *all* true premises have true conclusions.
2. Argument *a* has a false conclusion.
3. [So,] argument *a* is *not* a valid argument with *all* true premises.
4. [So,] *if* argument *a* is valid, it must *not* have *all* true premises.
5. Argument *a* is valid.
6. [So,] argument *a* must not have *all* true premises.
7. The first of argument *a*'s two premises is true.
8. Therefore, argument *a*'s second premise must be false.

  - This argument is valid and has all true premises. Sometimes, such arguments are called **sound** arguments. All sound arguments must have true conclusions. Why? Therefore, (6) answers our question!
    - Let's try to get in the habit of *giving arguments for our claims*.

- **Deductive Strength**
  - If an argument is valid, it is good — *from a logical perspective.* But, validity is only *part* of the story.

  - Ideally, an argument would be valid *and* it would also have premises that are (known to be) true (*viz.,* it would be *sound*).

  - More generally, we will speak of the *strength* of arguments.

  - The basic idea is that an argument will be *strong for a person S* just in case the argument is *both* (a) *well-formed,* and (b) *it is rational for S to believe all of the arguments premises.*

  - We will have one definition of strength for valid arguments, and a different definition of strength for cogent arguments.
    - We'll discuss the deductive/valid case first (it's simpler).

- **Deductive Strength**
  - We define *deductive strength* as follows:

  D4.1: An argument is *deductively strong* for a person if and only if
  1. it is deductively valid; and
  2. it is reasonable for the person to believe all the argument's premises.

  - If an argument is not deductively strong, then we say it is deductively *weak.* There are two main ways in which an argument may be deductively weak for a person S.

  - The argument may be *invalid.*

  - It may not be rational for S to believe *all* of its premises.
    - This includes cases in which it is reasonable to believe *each* premise *individually,* but *not* when taken *altogether.*