Philosophy 101

(2/10/11)

- **You should be reading well into Chapter 3 now**…
- **Solutions to HW #1 posted** (study them carefully)
- **HW #2 has been posted**. **Don't wait 'til last minute!**
- **Our first quiz is *Today*** (last 30-minutes of class).
- **I've posted a handout** on "3 Causes of *Ir*rational Belief".
- Today: Chapter 3
  - **The Basics of Argument Evaluation**
  - **Well-Formed Arguments**
    - **Logical Necessity and the Validity Arguments**

One more announcement…

Participate in experiments & earn cash!

We are a Rutgers University research group looking for **undergraduates 18 or older** to participate in studies on decision-making. The studies take place on College Avenue Campus in Scott Hall (Room 107). You receive a $5 show-up payment, plus an additional payment that depends on the details of the particular experiment. You are paid cash at the end.

If you would like to register to be contacted about experiments, please go to the following website to register:

http://rutgers-econ.sona-systems.com

Chapter 3: Well-Formed Arguments VI

- **Evaluating Arguments: An Introduction**
- As a first pass, this argument has the following *standard form*:

1. Drugs only hurt those who use them.

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2. (Therefore,) Drugs should be legal.

- In order to evaluate the strength of this argument, we need (first) to forget our own attitude(s) toward the conclusion.
- What we're after is an assessment of *the strength of* ***this particular argument*** *for the legalization of drugs*.
- It doesn't matter what *other* arguments there may or may not be for (or against) this conclusion. They are ***irrelevant*** to the assessment of the strength of ***this*** argument.

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- **Evaluating Arguments: An Introduction**
- There are ***only two*** sorts of questions that ***are relevant*** regarding the assessment of the strength of an argument.
  - Are the premises of the argument *true*?
  - Is the conclusion *supported by* the premises (***if*** true)?
- That is, there are ***only two*** legitimate ways to *criticize* an argument (*i.e.*, to try to show it is not as strong is it could be).
  - Show that *some of the premises are false*.
  - Show that *the conclusion is not supported by the premises*.
    - Note: *reasons to think the conclusion is false are* ***irrelevant***!
- Let's now return to our (simple) example of the 1-premise argument for the conclusion that drugs should be legal.

Chapter 3: Well-Formed Arguments VIII

- **Evaluating Arguments: An Introduction**

Critic 1: It is true that drugs hurt only those who use them. But this does not show that they should be legal. Sometimes people have to be protected from their own foolishness and mistakes. This may be a case in which it's the job of the government to make it harder for people to harm themselves.

- Which of the two sorts of (potentially relevant) criticisms is *this*?

Critic 2: If it were true that drugs hurt only those who use them, then I'd accept your argument. But it is not true. When pregnant women use drugs, they hurt their unborn children. When parents use them, they often become less responsible and caring parents and so they hurt their children. Some people who use drugs become violent and harm their spouses or others with whom they come into contact. So, drugs don't hurt only drug users.

- Which of the two sorts of (potentially relevant) criticisms is *this*?

Chapter 3: Well-Formed Arguments IX

- **Evaluating Arguments: An Introduction**

- **Critic 1** *believes* the premise of the argument, but *disbelieves* that the premise supports the conclusion (*even* ***if*** it were true).

- **Critic 2** *believes* that the premise of the argument supports its conclusion (***if*** true), but *disbelieves* that the premise ***is*** *true*.

- Each critic *provides an argument against* the claim they *disbelieve*, but *no* argument *for* the claims they *believe* (*i.e.*, they only give arguments *for their criticisms* of the argument).

➡ Note how carefully analyzing *one* argument (**A**) can ultimately involve analyzing *many* arguments that pertain to the two considerations that are relevant to the strength of argument (**A**). [This is one reason why argument analysis is subtle.]

Chapter 3: Well-Formed Arguments X

- **Evaluating Arguments: An Introduction**

- Here are two more introductory examples to discuss…

Example 3.2

Connie and Diane are discussing the recent student elections. They want to know whether Boris voted. Connie reasons as follows: "Boris is a responsible student. So he must have voted." Diane replies, "I agree with you about Boris's being responsible, but it just doesn't follow that he voted. He might have been sick or out of town or too busy. We can't conclude that he voted."

Example 3.3

Daniel and Anders are wondering how cold it is outside. Daniel looks outside and sees that the water on a nearby pond is frozen. He then argues: "The water in that pond is frozen. Water freezes at 0 degrees Fahrenheit. So it must be 0 degrees Fahrenheit or lower outside." Anders might reply, "That would be a good argument if you were right about the freezing point of water, but water freezes at 32 degrees Fahrenheit, not 0 degrees Fahrenheit."

Chapter 3: Well-Formed Arguments XI

- **Well-Formed Arguments**
- If the conclusion of an argument *follows from* its premises (*i.e.*, if the conclusion *would be supported by the premises* ***if*** *the they were true*), then we say that the argument is ***well-formed***.

- An argument's being well-formed involves a ***logical*** relation between the premises and conclusion of the argument.

- There are two types of well-formed arguments:

  - **Valid arguments**. These are arguments such that *the truth of their premises* ***guarantees*** *the truth of their conclusion*.

  - **Cogent arguments**. These are such that *the truth of their premises makes the truth of their conclusion* ***probable*** (but *does not guarantee* the truth of their conclusion).

Chapter 3: Well-Formed Arguments XII

- **Well-Formed Arguments**
- We will study *valid* arguments first, and (merely) cogent arguments later. Valid arguments are easier to characterize.

- Here is a *preliminary definition* of validity:

  - **D3.1**: An argument is *valid* (*aka deductively valid*) if and only if (iff) *it is (**logically**) impossible for all the premises of the argument to be true while the conclusion of the argument is false*.

- In order to properly understand the meaning of this definition, we need to say what "logically impossible" *means*.

- To say that a statement is logically impossible is to say something *stronger* than that it is (*merely*) *physically* impossible (or *even mathematically* impossible). Here are some examples…

Chapter 3: Well-Formed Arguments XIII

- **Well-Formed Arguments**
- Some propositions are *actually* true (Snow is white), and some are *not* (Al Gore is President of the United States in 2007).

- Other propositions are *not actually* true, but *still possibly* true.
  - Al Gore is *not actually* our President in 2007, but he *might have been*—it is *possibly true* that Al Gore is President in 2007.

- Some propositions are *not even **possibly** true*. For instance:
  - (1) My car has traveled faster than the speed of light.
  - (2) 2 + 2 = 5.
  - (3) Branden weighs 200lbs ***and*** Branden does ***not*** weigh 200lbs.

- (1) violates the laws of physics: it is ***physically*** *impossible*. (2) violates the laws of arithmetic: it is ***arithmetically*** impossible.
➡ (3) violates the laws of ***logic***: it is ***logically*** impossible.

Chapter 3: Well-Formed Arguments XIV

- **Well-Formed Arguments**
- Some propositions are not only *actually* true, but (logically) *necessarily* true. These *must* be true, *on pain of self-contradiction*.

  - *Either* Branden weighs 200lbs *or* he does *not* weigh 200lbs.
  - *If* Branden is a good man, *then* Branden is a man.

- Logical possibility & necessity are *central* concepts for us.

- We will examine some *formal* aspects of logical necessity.

- Before we get into that *formal* theorizing, we'll think informally about the *following-from* relation between propositions.

- Properly understanding the following-from relation will require a grasp of the concept of logical necessity.

Chapter 3: Well-Formed Arguments XV

- **Validity**
- Informally, if the conclusion of an argument *follows from* its premises, then we say the argument is ***valid***.

- Here is a more precise *definition* of *validity*:

- **D3.1**: An argument is ***valid*** if and only if it is (logically!) *impossible* for both of the following to hold (simultaneously):
  1. all the premises of the argument are true, but
  2. the conclusion of the argument is false.

- Another (*equivalent*) way of putting this is as follows:
  - **D3.2**: An argument is ***valid*** if and only if the following conditional claim is (logically!) *necessarily true*:
    - *If* all of the premises of the argument *were* true, *then* the conclusion of the argument would *also* have to be true.

Chapter 3: Well-Formed Arguments XVI

- **Validity**
- The *validity* of an argument has nothing to do with whether the premises (or conclusion) are *actually* true.

- In this sense, determining whether an argument is valid is really a *hypothetical* (or "*imaginative*") exercise. Three steps:

1. First, *imagine* a situation/world in which all of the premises of the argument are true (this need not be the actual world!).

2. Second, ask yourself this question: "*Could* the conclusion of the argument be *false* — *in such a situation/world*?".
   - where the "could" involves ***logical*** possibility/necessity.

3. If the answer to this question is "No", then the argument is *valid*. If the answer is "Yes" then the argument is *in*valid.

Chapter 3: Well-Formed Arguments XVIII

- **Validity — Eight Examples**

1)	All wines are beverages. Chardonnay is a wine. Therefore, chardonnay is a beverage.	**5)**	All wines are beverages. Chardonnay is a beverage. Therefore, chardonnay is a wine.
2)	All wines are whiskeys. Chardonnay is a wine. Therefore, chardonnay is a whiskey.	**6)**	All wines are beverages. Ginger ale is a beverage. Therefore, ginger ale is a wine.
3)	All wines are soft drinks. Ginger ale is a wine. Therefore, ginger ale is a soft drink.	**7)**	All wines are whiskeys. Chardonnay is a whiskey. Therefore, chardonnay is a wine.
4)	All wines are whiskeys. Ginger ale is a wine. Therefore, ginger ale is a whiskey.	**8)**	All wines are whiskeys. Ginger ale is a whiskey. Therefore, ginger ale is a wine.