

## Philosophy 57 — Day 6

- Quiz # 1 solutions online
- See me after class if you need your quiz back
- ≈Curve: 88–100 (A), 76–84 (B), 68–72 (C), 60–66 (D), < 60 (F)
- Don't panic, there are 7 quizzes (2 are dropped) . . .
- Today: Chapter 3, Continued . . .
- Next Quiz: [Tuesday, 2/18/03](#) (on *chapter 3 only*)



## Fallacies of Relevance IV

- An **argument against the person** (*argumentum ad hominem*) occurs when, rather than responding to the substance of someone's *argument*, a would-be objector directs our attention instead to the *person doing the arguing*.
- There are several types of *ad hominem* arguments:
  - **Ad Hominem Abusive:**  
Before he died, poet Allen Ginsburg argued in favor of legalizing pornography. But, Ginsberg's arguments are nothing but trash. Ginsberg was a marijuana-smoking homosexual and a thoroughgoing advocate of the drug culture.
  - **Ad Hominem Circumstantial:**  
The Dalai Lama argues that China has no business in Tibet and that the West should do something about it. But the Dalai Lama just wants the Chinese to leave so he can return as leader. Naturally he argues this way. So, we should reject his arguments.



## Fallacies of Relevance IV — Continued

- **Tu Quoque** (“you too”):  
Child to parent: Your argument that I should stop stealing candy from the corner store is no good. You told me yourself just a week ago that you, too, stole candy when you were a kid.
- **Cautionary Remark:** *Ad Hominem* is fallacious **only if** it aims to criticize a person's *argument by* criticizing the person. This may *not* be the aim . . .
- If the *aim is* to criticize the *person*, then there may be no fallacy at all.  
Osama Bin Laden planned the destruction of the World Trade Center, killing thousands of innocent people, and he supports terrorist causes all over the world. Bin Laden is therefore a brutal and violent person.
- Here's a more subtle example:  
Mickey testified that he saw Freddy set fire to the building. But, Mickey was recently convicted on 10 counts of perjury, and he hates Freddy and would love to see him sent to jail. So, you shouldn't believe Mickey's testimony.



## Fallacies of Relevance VI

- The **straw man** fallacy is committed when an arguer (1) distorts an opponent's argument, making it easily refutable, (2) refutes the distorted argument, then (3) concludes that the opponent's *original* argument has been refuted.
  - Ms. Volmer has argued that we reduce the speed limit on our freeways to 55 miles per hour. Using her logic, we should go a bit further and reduce it to 35. Then we'll just be crawling along. Think of the massive traffic congestion we'll have. Total gridlock! I think we can all see that Ms. Volmer's argument is a bad idea.
  - Mr. Rankin has just given his argument against affirmative action for women. What he's *really* saying is that women should stay out of the work place altogether — just keep them barefoot and pregnant! I think we are all smart enough to reject *that* argument.
- Typically, the creator of a straw man will try to make their opponent's argument sound more *extreme* or more *controversial* than it really is.



## Fallacies of Relevance VII

- The **red herring** fallacy is committed when an arguer diverts the attention of the reader by *changing the subject* to a different (maybe subtly related) one.
  - The Auto Advisor column of the newspaper says that the Chevy Corsica is a great car. But the column fails to mention that General Motors executives make millions of dollars. Nobody deserves to be paid that much. In fairness, people should be paid according to the amount of work they do, and none of those executives does any more work than the average guy on the assembly line. Clearly the Auto Advisor is out to lunch.
  - Animal rights activists say that animals are abused in biomedical research labs. But consider this: Pets are abused by their owners every day. Probably 25% of pet owners should never get near animals. Some cases of abuse are enough to make you sick.
- Red herrings *don't* involve 'defeating' a distorted argument (straw men *do*).



## Fallacies of Relevance VIII

- An arguer is guilty of **missing the point** (*ignorantio elenchi*) if the premises of their argument support one (identifiable!) conclusion, but then they infer a *different* (sometimes vaguely related), and *illogical* conclusion.
  - Wage earners cannot currently live on the minimum wage. Therefore, the minimum wage should be abolished.
  - Grade school children these days can neither read or write. Clearly, prayer should be returned to the classroom.
- You should always be able to *identify* at least one statement which the premises seem to logically suggest as an appropriate conclusion.
- In cases of red herring and straw man, the conclusion drawn by the arguer *is relevant* to the premises they cite (it's just that the premises they cite have nothing to do with the original argument!). Not so with missing the point.
- Missing the point is sort of a 'catch all' category for fallacies of relevance. It is a 'last resort', if one cannot fit a fallacy into any of the other categories.



## Fallacies of Ambiguity

- The fallacy of **equivocation** occurs when the conclusion of an argument depends on the fact that a *word or phrase* is used *in two different senses*.
  - Ms. Thomas said that she never swears. But she was just sworn in as a judge. Apparently Ms. Thomas does not tell the truth.
  - Dense objects tend to sink in water. But Michael is incredibly dense. In fact, he never made it out of grade school. Therefore, Michael should stay out of the water.
- The fallacy of **amphiboly** occurs when the arguer misinterprets an ambiguous statement and then draws a conclusion based on this faulty interpretation. The ambiguity usually arises from a mistake in *grammar or punctuation*.
  - Christine said that she painted her picture hanging on the wall of her bedroom. Obviously Christine is quite an acrobat.
  - Cyndi said that she saw a man walking a dog through her window. Clearly that man should be charged with animal abuse.



## Fallacies of Grammatical Analogy

- The fallacy of **composition** occurs when the conclusion of an argument depends on the erroneous transference of an attribute from the parts of something onto the whole.
  - Each atom in this table is invisible to the naked eye. Therefore, the table is invisible to the naked eye.
  - Carbon and oxygen are nonpoisonous elements. Therefore, carbon monoxide, which is composed exclusively of carbon and oxygen, is nonpoisonous.
- The fallacy of **division** occurs when the conclusion of an argument depends on the erroneous transference of an attribute from a whole onto its parts.
  - This chocolate cake is delicious. Therefore, each of its ingredients should be delicious.
  - This nylon rope will withstand a load of 1000 pounds. Therefore, each strand in the rope will withstand a load of 1000 pounds.



### Some Exercises

- Can you identify the kind of fallacy (if there is one!) in these passages?
- This thousand dollar bill is very valuable. Therefore, if it is torn up into a hundred pieces, each piece should be valuable.
- Professor Parker argues that we should implement sex education classes starting in the sixth grade. Apparently what the professor wants is for kids to start having sex at age 9 or 10. This is just crazy! Clearly the professor's arguments are misguided.
- Student to professor: My father is a major contributor to this college, and if you don't agree that I deserve an "A" in this class, I'll see to it that you lose your job.
- You've got to see Steven Spielberg's latest film immediately. It's breaking all the box office records, and everyone I know is raving about it.
- So your stock broker has tried to persuade you to buy 1000 shares of Macro Data. Well, I wouldn't trust his arguments. He just wants to earn that fat commission on the sale.



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- Mr. Haller has just given us reasons why we should place more emphasis on family values. But he has no business talking. Just a week ago he got a divorce.
- Bill Gilmore has argued for increased funding for the disabled. But nobody should listen to that argument. Gilmore is a slob who cheats on his wife, beats his kids, and never pays his bills on time.
- Children should obey their parents. Therefore, little Jackie should follow his alcoholic father's orders to drop out of school and get a job.
- Senator Hyde has argued that the Clean Water Act should never be weakened. But the point is that water is one of the most common substances on Earth. Over two-thirds of our planet's surface is covered with water, and massive amounts of frozen water cover both poles. If the ice caps were ever to melt, ocean levels would rise several feet. Obviously the senator has been misinformed.



### Chapter 4: Categorical Statements — Overview & Definition

- I will not be covering sections 4.5 or 4.6. These sections are concerned with the traditional (ancient), Aristotelian perspective on categorical claims.
- Moreover, I will only be discussing the modern, Boolean perspective on categorical claims. This excludes some stuff from section 4.3 as well.
- Our goal in 4 & 5 is to learn how to analyze categorical *arguments* (*sylogisms*). First, we need categorical *statements* (their building blocks).
- Here are two examples of categorical statements in ordinary language:
  - \* Light rays travel at a fixed speed.
  - \* Not all convicted murderers get the death penalty.
- A **categorical statement** (or **proposition**) relates two classes or categories, denoted by the **subject term** (*S*) and the **predicate term** (*P*). Categorical statements assert that either all or part of *S* is included in (excluded from) *P*.
- What are *S* and *P* in the above two categorical statements?



### Chapter 4: Categorical Statements — Forms & Components

- Categorical statements come in four **standard forms** (we'll discuss *translating* categorical claims from English into standard form at the end of the chapter):
  - \* All *S* are *P*.
  - \* No *S* are *P*.
  - \* Some *S* are *P*.
  - \* Some *S* are not *P*.
- The words "all", "no" and "some" are called **quantifiers** because they specify *how much of S* is included in (or excluded from) *P*.
- The words "are" and "are not" are called the **copula**, because they link (or "couple") the subject term with the predicate term.
- Consider the following example of a standard form categorical statement:
  - \* All members of the American Medical Association are persons holding degrees from recognized academic institutions.
- What are its quantifier, subject term, predicate term, and copula?



**Chapter 4: Categorical Statements — Quality, Quantity & Distribution I**

All *S* are *P*. Every member of the *S* class is a member of the *P* class. In other words, the *S* class is *contained in* the *P* class.

No *S* are *P*. No member of the *S* class is a member of the *P* class. In other words, the *S* class is *excluded from* the *P* class.

Some *S* are *P*. At least one member of the *S* class is a member of the *P* class.

Some *S* are not *P*. At least one member of the *S* class is *not* a member of the *P* class.

- The **quality** of a categorical claim is either **affirmative** or **negative**, depending on whether it *affirms* or *denies* class membership.
  - \* “All *S* are *P*” and “Some *S* are *P*” have *affirmative* quality.
  - \* “No *S* are *P*” and “Some *S* are not *P*” have *negative* quality.
- The **quantity** of a categorical claim is either **universal** or **particular**, depending on whether it makes a claim about *every* member or just *some* member of *S*.
  - \* “All *S* are *P*” and “No *S* are *P*” are *universal*.
  - \* “Some *S* are *P*” and “Some *S* are not *P*” are *particular*.



**Chapter 4: Categorical Statements — Quality, Quantity & Distribution II**

- **Meaning Note:** “Some *S* are *P*” does *not* imply “Some *S* are not *P*.”
- It is customary to give the single letter names “**A**”, “**E**”, “**I**”, and “**O**” to the four kinds of standard form categorical claims (first four vowels).

| Proposition                      | Letter Name | Quantity   | Quality     |
|----------------------------------|-------------|------------|-------------|
| All <i>S</i> are <i>P</i> .      | <b>A</b>    | Universal  | Affirmative |
| No <i>S</i> are <i>P</i> .       | <b>E</b>    | Universal  | Negative    |
| Some <i>S</i> are <i>P</i> .     | <b>I</b>    | Particular | Affirmative |
| Some <i>S</i> are not <i>P</i> . | <b>O</b>    | Particular | Negative    |

- Unlike quality and quantity, which are attributes of entire categorical statements, **distribution** is a property of a *term* in a categorical statement.
- A term *X* is **distributed** in a categorical statement if the statement asserts something about *every* member of the class *X* (otherwise, *X* is *undistributed*).
- For instance, in the categorical statement (**A**) “All *S* are *P*”, the term *S* is distributed, but the term *P* is *undistributed* (*why?*). What about **E**, **I**, **O** claims?



**Chapter 4: Categorical Statements — Quality, Quantity & Distribution III**

- To determine whether terms are distributed in claims, it helps to visualize what the claims assert about *S* and *P* using Venn Diagrams.
- In an **E** claim, “No *S* are *P*”, an assertion is made about every member of the class *S* (*i.e.*, that every member of the class *S* is *outside of* the class *P*).
- But, **E** claims *also* assert something about every member of the class *P* (*i.e.*, that every member of the class *P* is *outside of* the class *S*).
- So, *both S and P* are distributed in an **E** claim “No *S* are *P*”.
- In an **I** claim, “Some *S* are *P*”, an assertion is made about *at least one* member of *S* and *at least one* member of *P*. But, *no* assertion is made about *every* member of either class. So, *neither S nor P* is distributed in an **I** claim.
- In an **O** claim, “Some *S* are not *P*”, an assertion is made about *at least one* member of *S*, but *not* about *every* member of *S*. So, *S* is *undistributed* in **O**.
- But, *P* is distributed in an **O** claim. *Why?* Use a Venn Diagram here.



**Chapter 4: Categorical Statements — Quality, Quantity & Distribution IV**

| Proposition                      | Name     | Quantity   | Quality     | <i>S</i>      | <i>P</i>      |
|----------------------------------|----------|------------|-------------|---------------|---------------|
| All <i>S</i> are <i>P</i> .      | <b>A</b> | Universal  | Affirmative | Distributed   | Undistributed |
| No <i>S</i> are <i>P</i> .       | <b>E</b> | Universal  | Negative    | Distributed   | Distributed   |
| Some <i>S</i> are <i>P</i> .     | <b>I</b> | Particular | Affirmative | Undistributed | Undistributed |
| Some <i>S</i> are not <i>P</i> . | <b>O</b> | Particular | Negative    | Undistributed | Distributed   |

- It may help to simply *memorize* the cases of distribution. The text offers two mnemonic devices for remembering the above facts about distribution.

**Mnemonic #1. Unprepared Students Never Pass.**

Universals distribute Subjects. Negatives distribute Predicates.

**Mnemonic #2. Any Student Earning B’s Is Not On Probation.**

**A** distributes Subject. **E** distributes Both.

**I** distributes Neither. **O** distributes Predicate.

- I prefer to *deduce* these using Venn Diagrams and the *definition* of distribution. **In Logic, answers can always be deduced from basic definitions.**

