CS210: Logical Argumentation

CS210 Spring 2015
Week 4
Announcements

• Third written assignment has been posted
• Peer reviews from last week have been posted
Review

• What is morality?
• What is ethics?
• What does “morally opaque” mean?
• What is “moral subjectivism”?
• How does cultural relativism differ from moral relativism?
• What is moral absolutism?
Review

• What is ethical objectivism?
• What were the four ethical theories?
• Can you describe each theory?
• What is eudaimonia?
• What is our comprehensive method for approaching ethical issues?
Comprehensive Method

1. **Identify** the practice or feature
   
a. **Disclose** opaque features
   
b. **Assess** sociological implications
   
c. **Search** for existing policies or ethical codes

2. **Analyze** the ethical issue
   
a. **Identify** any policy vacuums
   
b. **Clear up** conceptual muddles
Comprehensive Method

3. *Deliberate* on the ethical issue

   a. *Apply* one or more ethical theories

   b. *Justify* the position using logical argumentation
Logical Argumentation

- Method we use to test an ethical thesis
- *Claim* - a statement or assertion
- *Argument* - a series of claims aimed at establishing the truth of one central claim (the conclusion)
- Each of the other claims is called a *premise*
Argument Structure

Premise 1
Premise 2
Premise 3
...
Premise n

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Conclusion
Argument Structure

Classes should teach methods for testing theses. This class is about ethics. Ethical theses are tested by argumentation.

This class should teach logical argumentation.
Valid arguments

• If we accept the premises, it is impossible for the conclusion to be false.
• An *invalid* argument is one where we can imagine that the conclusion *could* be false, even if we accept *all* of the premises as true.
• *One counterexample* is sufficient to identify an invalid argument.
Example

All students who drink coffee are smart.
Jamie is a student.
Jamie does not drink coffee.

Jamie is not smart.
Example

All smart students drink coffee.
Jamie is a student.
Jamie does not drink coffee.

Jamie is not smart.
Sound arguments

• A valid argument whose premises are all true
• A sound argument is strong
Example

All CEOs of US companies have been US citizens. Marissa Mayer is a US citizen.

Marissa Mayer is a CEO of a US company.
Most CEOs are college graduates.
Satya Nadella is a CEO.

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Satya Nadella is a college graduate.
Inductive arguments

• Assuming premises are true, conclusion *likely* follows.

• An *invalid* argument can be strong if it is *inductive*. 
Example

90% of iPhone users with a laptop own Apple laptops.
I have an iPhone.
I have a laptop.

I own an Apple laptop.
Fallacious arguments

• Invalid arguments whose premises do not support their conclusion
• Premises have no bearing on truth of conclusion
Example

The Internet is a public space.

Those who use the Internet should not expect privacy.
Evaluating an argument

1. Identify premises and conclusion
2. Test validity (look for counterexample)
3. If valid, check if sound (investigate premises)
4. If invalid, check if inductive (is conclusion more likely to be true if premises are true?)
5. Assess the argument’s strength
From now on...

- Evaluate *your peers’* arguments
- Evaluate *references’* arguments
- Evaluate *my* arguments
- Evaluate *textbook’s* arguments

- **Evaluate your own arguments!**
Tips for making a good argument

• Start with conclusion
• Make a strong argument
• *Explain* why each premise supports your claim
• Anticipate and respond to counterarguments
• Be charitable to your opponent
• Careful about rhetorical flourishes
“I would never die for my beliefs, because I might be wrong.” - Bertrand Russell

“Doubt is an uncomfortable condition, but certainty is a ridiculous one.” - Voltaire