

CS 4001: Computing, Society & Professionalism

Munmun De Choudhury | Assistant Professor | School of Interactive Computing

Week 6: Core and Logical Structure
of Arguments; Evidence
February 12, 2019



Term Paper Proposal

Elements of an Argument

An **argument** states a **claim** and supports it with reasons and evidence from sources.

Arguing your side makes you the **proponent**.

Arguments and Pseudo-arguments


- Rational arguments degenerate to pseudo-arguments when there is no possibility for listening, learning, growth, or change
- Pseudo-arguments – committed believers and fanatical skeptics
- Lack of shared assumptions
 - The problem of ideology
 - The problem of personal opinions

Discussion Point

- Which one of the following statements will lead to reasonable arguments?
- A: Are the Star Wars films good science fiction?
- B: Is it ethically justifiable to capture dolphins and train them for human entertainment?

Power of Audience-Based Reasons

- Both Aristotle and Toulmin support the need to create “audience-based reasons.”
- Whenever you consider a piece of argumentative writing, you must couple that with the question “who is reading/affected by it?”
- A good reason to you may not be a good reason to others.



Class Exercise 1A: Audience-Based Reasons

Framing for an Audience

- <http://ethicsunwrapped.utexas.edu/video/framing>



Class Exercise 1B: Framing for an Audience



Evidence

What is Evidence?

- “Evidence”: all the verifiable information a writer might use as a support for their argument, such as facts, observations, examples, cases, testimony, experimental findings, survey data, statistics, etc.
- Evidence is part of the “grounds” and “backing” of an argument in support of reasons and warrant respectively

Use of Evidence

- Consider a target audience of educated, reasonable, and careful readers who approach an issue with healthy skepticism, open-minded but cautious. What demands would they make on a writer's use of evidence?
- Apply the STAR Criteria to Evidence (by Richard Fulkerson)
- *Ex: After-school jobs are bad for teenagers because they take away study time.*
- **Sufficiency:** Is there enough evidence?
- **Typicality:** Is the chosen evidence representative and typical?
- **Accuracy:** Is the evidence accurate and up-to-date?
- **Relevance:** Is the evidence relevant to the claim?

Rhetorical Understanding of Evidence

- Kinds of evidence
 - Data from personal experience
 - Data from observations or field research
 - Data from interviews, questionnaires, surveys
 - Data from reading and research/library/internet
 - Testimony
 - Statistical data
 - Hypothetical examples, cases and scenarios
 - Reasoned sequence of ideas

Data from personal experience

- Despite the recent criticism that Ritalin is overprescribed for ADHD, it can often seem like a miracle drug. My little brother is a perfect example, Before he was given the drug, he was a terror in school... (tell the before and after story)
- Strengths?
- Limitations?

Data from observation or field research

- The intersection at Fifth and Montgomery is particularly dangerous because pedestrians almost never find a comfortable break in the heavy flow of cars. On April 29, I watched 57 pedestrians cross the street. Not once did cars stop in both directions before the pedestrian stepped off the sidewalk onto the street... (continue with observed data about danger)
- Strengths?
- Limitations?

Data from interviews, questionnaires

- Another reason to ban laptops from classroom is the extent to which laptop users disturb other students. In a questionnaire that I distributed to 50 students in my residence hall, a surprising 60% said that they were annoyed by fellow student' sending email, paying their bills or surfing the web, while pretending to take notes in class. Additionally, I interviewed 5 students who gave me specific examples of how these distractions interfere with learning... (report examples)
- Strengths?
- Limitations?

Data from testimony

- Although the Swedish economist Bjorn Lomborg claims that acid rain is not a significant problem, many environmentalists disagree. According to David Bellamany, president of the Conservation Foundation, “Acid rain does kill forests and people around the world, and it is still going so in the most polluted places, such as Russia” (qtd. In BBC News)
- Strengths?
- Limitations?

Data from Statistics

- Americans are delaying marriage at a surprising rate. In 1970, 85% of Americans between the ages of 25-29 years were married. In 2010, however, only 45% were married (a statistical source).
- Strengths?
- Limitations?



Class Exercise 2: Use of Evidence



The Role of Assumptions – Warrant, Grounds, and Backing

The Role of Assumptions

- Our arguments are not grounded in abstract, catch-all statements.
- Instead, grounded in beliefs, assumptions, or values granted by your audience.
- As long as assumptions are shared, they can remain unstated. If not shared, well, we have an issue.

Terms to know...

- **Claim:** statement to be justified/proven/upheld
- **Reason*:** the reasons, support, and evidence to support your claim
- **Warrant:** a stated or unstated belief, rule, principle, or principle that underlies an argument
 - Audience must accept the warrant

* A “because” clause attached to a claim is an incomplete logical structure called an **enthymeme**



CLAIM:

After-school jobs are bad
for teenagers.

REASON:

Because they take away
study time

WARRANT:

Loss of study time is bad.

Alternative Argument

After-school jobs are good for teenagers because they teach responsibility and time management

CLAIM:

After-school jobs are
good for teenagers

REASON:

Because they teach time
responsibility and time
management

WARRANT:

Learning responsibility
and time management is
good.



Class Exercise 3: Warrant

Grounds and Backing

- Alright—so we have a logical structure forming.
- An Enthymeme (a claim with a because clause)
- A Warrant (articulating our assumptions)
- That's great!
- But, we need more. Lots more. These are just statements. The BONES of an argument.
- According to Toulmin, we need GROUNDS and BACKING in order to “flesh out” our argument for the masses.

Grounds and Backing

- **Claim:** statement to be justified/proven/upheld
- **Reason:** the reasons, support, and evidence to support your claim
- **Warrant:** a stated or unstated belief, rule, or principle that underlies an argument
 - Audience must accept the warrant
- To give body and weight to our arguments, we also need:
 - **Grounds:** a statement, supporting evidence, facts, data that is established before an argument is begun
 - **Backing:** argument that supports the warrant

Grounds

- Grounds are the supporting evidence—data, facts, statistics, testimony, or examples—that cause you to make your claim. They are collectively all the evidence you use to support a reason.
- Grounds answers the question “How do you know?”

Backing

- Backing is the argument that supports the warrant, or underlying assumption.
- In some cases, successful arguments require just three components: a claim, a reason, and grounds. However, if the audience questions or doubts the warrant, the writer needs to provide support for that argument.

After-school jobs are bad for teenagers because they take away study time.

- **Grounds:** (jobs take away study time) data/evidence showing that after-school jobs take away study time (e.g., of teenagers who work late and don't study, statistics showing that teenagers with jobs study less than those without jobs, testimony from teachers that working students study less than those with jobs)

After-school jobs are bad for teenagers because they take away study time.

- **(Backing)**: Argument showing why loss of study time is bad (it leads to lower grades, to inadequate preparation for college, to less enjoyment of school, to lower self-image as a student, etc.)

A Resistant Audience

- Often, a resistant audience will offer REBUTTALS—attacks and counterarguments on your assertions.
- But, these rebuttals are good—they remind us to look at our arguments from the perspective of a skeptic.
- The best writers will plan for them, anticipate them, and counter them before they arise.

ENTHYMEME

CLAIM Cocaine and heroin should be legalized

REASON because legalization would eliminate the black market in drugs.

GROUND

Statistical evidence and arguments showing how legalization would end black market:

- Statistics and data showing the size of the current black market
- Examples, anecdotes, facts showing how the black market works
- Causal explanation showing that selling cocaine and heroin legally in state-controlled stores would lower price and eliminate drug dealers

WARRANT

Eliminating the black market in drugs is good

BACKING

Statistics and examples about the ill effects of the black market

- The high cost of the black market to crime victims
- The high cost to taxpayers of waging the war against drugs
- The high cost of prisons to house incarcerated drug dealers
- Evidence that huge profits make drug dealing more attractive than ordinary jobs

CONDITIONS OF REBUTTAL

Attacking the reason and grounds


- Arguments showing that legalizing cocaine and heroin would not eliminate the black market in drugs
- Perhaps taxes on the drugs would keep the costs above black market prices
- Perhaps new kinds of illegal designer drugs would be developed and sold on the black market

CONDITIONS OF REBUTTAL

Attacking the warrant and backing

Arguments showing that the benefits of eliminating the black market are outweighed by the costs

- The number of new drug users and addicts would be unacceptably high.
- The health and economic cost of treating addiction would be too high.
- The social costs of selling drugs legally in liquor stores would bring harmful change to our cultural values.



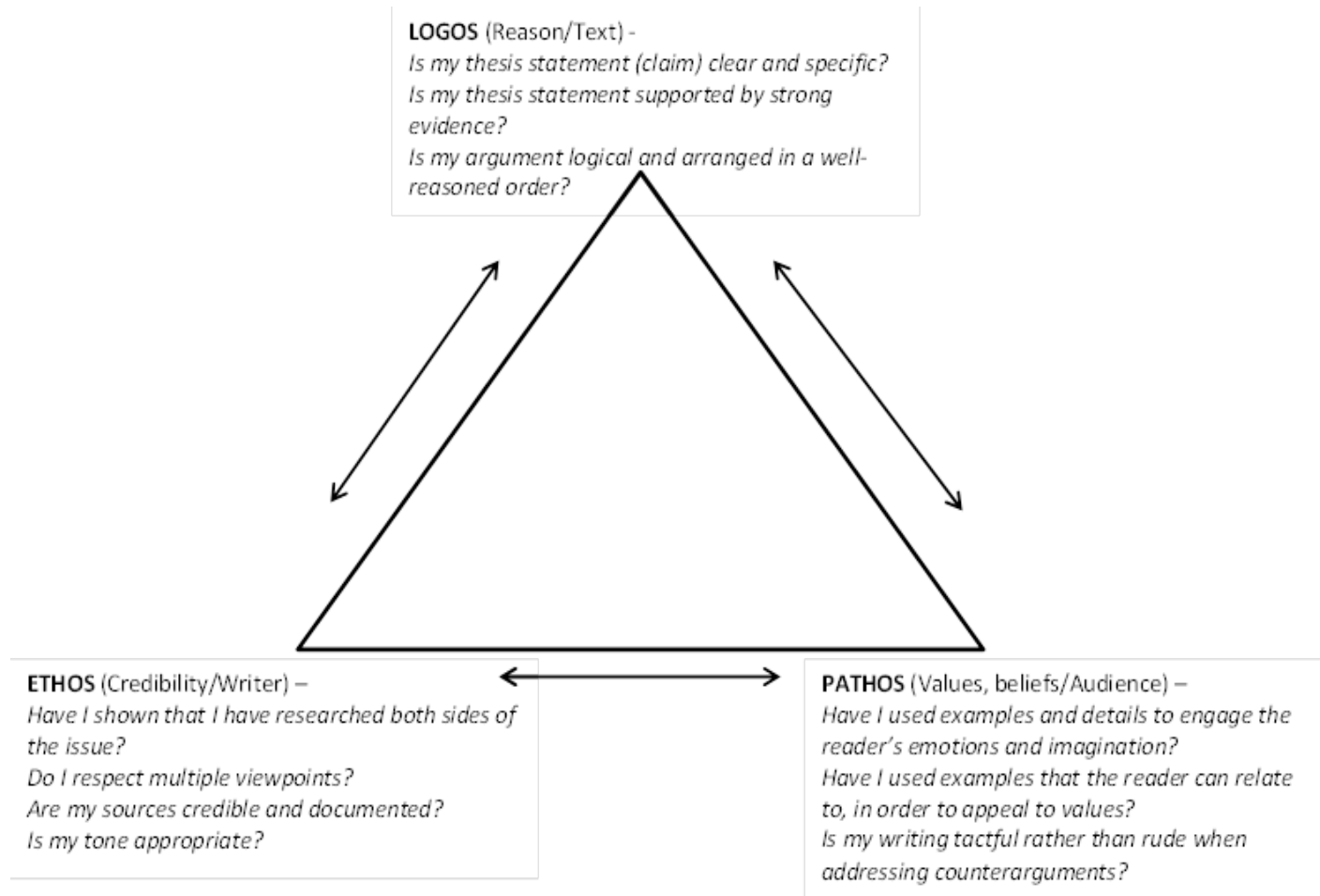
Class Exercise 4: Grounds, Backing, and Rebuttals



Rhetorical Structures

The Rhetorical Triangle

Don't forget to incorporate elements of ethos, pathos, and logos.



IMPORTANT POINTS TO CONSIDER:

- Effective arguments consider all three points on this triangle. They are interrelated - they help each other.
- All three of the corners of the Rhetorical Triangle overlap. You can do one or all of them in a single paragraph.

Ethos

- *Ethos*: Ethics
- To make the audience decide **right or wrong** about what is being presented to it
- Political issues, national beliefs, religious issues, etc...
- Typically has contrasting colors symbolizing the difference between good and evil.

Pathos

- *Pathos*: Emotion
- To make the audience **feel** something about what is presented to it
- Children, animals, illness, memories, etc...
- “Tugs at your heart strings”

Logos

- *Logos*: Logic
- To make the audience **think** about what is presented to it
- Statistics, facts, authorities, etc...
- Very straightforward, and not “fluff”. It has a very scientific, factual approach.

In Other Words...

- Ethos: Is it Ethical?
- Pathos: Does it make you feel a strong emotion?
- Logos: Does it make you use your sense of reason?

Ethos, Pathos, or Logos?



MICHELIN. BECAUSE SO MUCH IS RIDING ON YOUR TIRES.

At Michelin, we are guided by a single overriding concept: tires are—as far as we are concerned—the most important pieces of equipment you can put on your car.

Therefore, making the best tires possible, regardless of cost, has become an obsession with us.

That is why we make our own steel for our steel-belted radials. Why each tire model is so long in the development stage. And even longer in the testing and manufacturing stages.

That is also why Michels performs as well as they perform. And last as long as they last.

And, of course, why they cost more to buy.

Though you may find, as many Michelin buyers do, they end up costing less to own.



MICHELIN



MOBILE RAGE IS THE NEW ROAD RAGE

91%

of Americans say they have seen people misuse mobile tech, with an average of five incidents viewed per day.

Baseline

Ethos, Pathos, Logos?



There are some things you just
can't afford to gamble with.

When you get a cavity, there's no second chance.

That's why it's important that you know that more dentists recommend Crest for fighting cavities than all other toothpastes combined.

It's a point that's made rather

The dentists' choice for fighting cavities.

dramatically when you consider that Crest has prevented 523 million cavities since its introduction in 1955.

There are, of course, no sure things in your battle against cavities. But at least Crest helps put the odds in your favor.



*Crest has been shown to be an effective decay-preventive dentifrice that can be of significant value when used in a conscientiously applied program of oral hygiene and regular professional care. Council on Dental Therapeutics, American Dental Association. © 1987 P&G