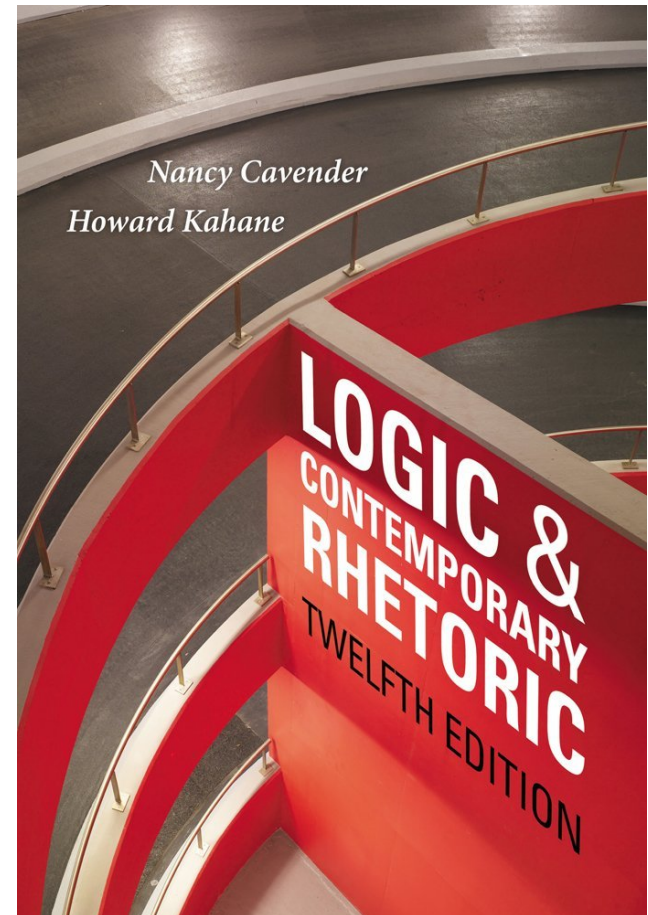


Persuasive Logic & Reasoning

Steven R. Van Hook, PhD

Reference Textbook

- *Logic and Contemporary Rhetoric: The Use of Reason in Everyday Life*, by Howard Kahane and Nancy M. Cavender. Independence, KY: Cengage Learning, 2013. ISBN-10: 1133942288



Persuasive Logic & Reasoning

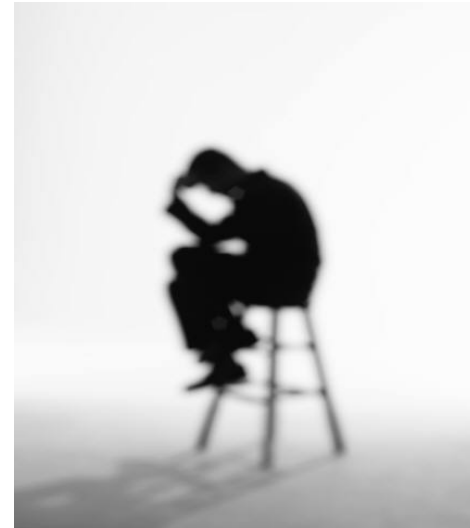
Unit 1

Foundational Terms & Concepts

Steven R. Van Hook, PhD

Let's develop our reasoning skills

- Logic
- Clear reasoning
- Effective argument
- Fallacy analysis
- Coherence
- Problem solving
- Persuasion
- Induction
- Deduction



- Intellect
- Courage
- Confidence
- Strength

Unit 1

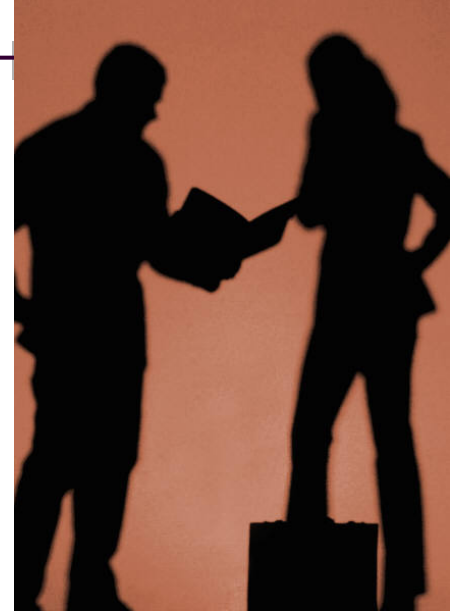
Persuasive Logic & Reason
Steven R. Van Hook, PhD

GOOD & BAD REASONING

The Argument Structure

■ ***Premises and Conclusions:***

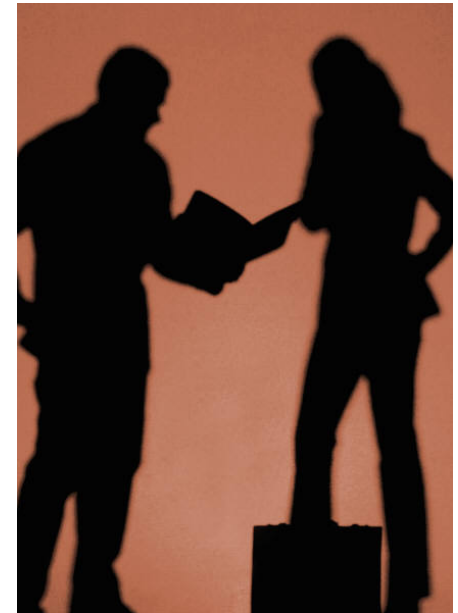
- 1) Identical twins often have different test scores (*premise 1*)
- 2) Identical twins inherit the same genes (*premise 2*)
- 3) So environment must play some sort of part in determining IQ (*claim or conclusion*)



Exercise:

Identify the Premises and Conclusions

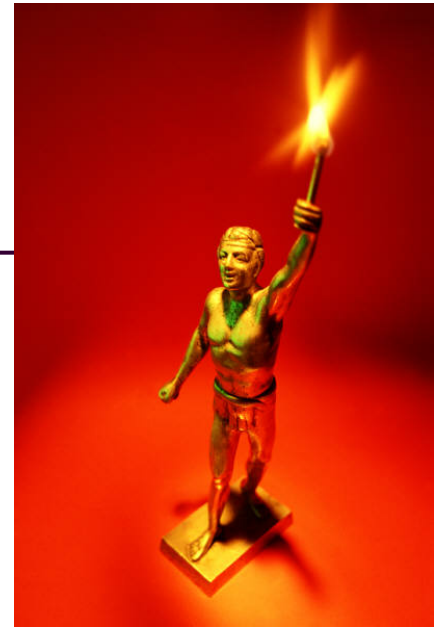
- **Statement:** “It is difficult to gauge the pain felt by animals because pain is subjective and animals cannot talk.”
- **Premise 1:** Pain is subjective;
- **Premise 2:** Animals can’t communicate;
- **Conclusion:** We cannot measure the pain animals feel
- If the premises are faulty, the conclusion may be faulty.



Argument Structure

- 1) It's always wrong to kill a human being (true or false premise?)
- 2) Capital punishment kills a human being (true or false premise?)
- ∴ 3) Capital punishment is wrong (good or bad conclusion?)

Note: ∴ means 'therefore'



Reasoning

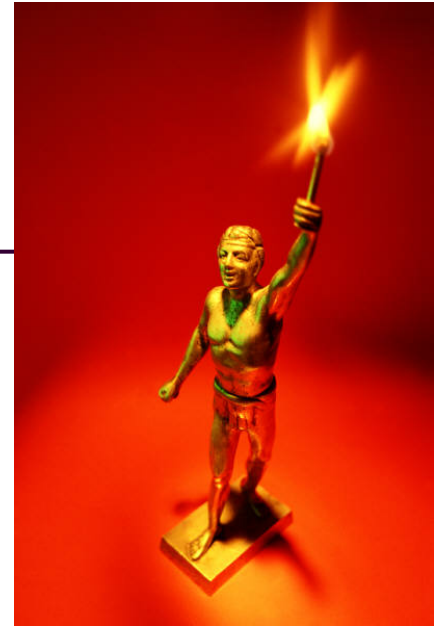
- **Reasoning:**

“Inferring from what we already know or believe to something else.”

- ***Examples:***

“It stands to reason that because of this, then that ...”

“It’s only logical *this* will happen, because *that* happened before ...”



Argument & Exposition

- **Argument:** One or more premises offered in support of a claim or conclusion
- **Exposition:** A statement or rhetorical discourse intended to give information or offer an explanation



Is it Argument or Exposition?

- “My summer vacation was spent working in Las Vegas. I worked as a host and made tons of money. But I guess I got addicted to the slots and didn’t save too much. Next summer my friend and I are going to work in Reno, if we can find jobs there.”

- **Argument or exposition?**

- **Exposition:** A statement or rhetorical discourse intended to give information or offer an explanation



Is it Argument or Exposition?

- “Why is there so much opposition to using animals for medical research? We know research saves human lives. True, some animals suffer in the process, but it’s worth it in the long run. After all, most people value the lives of humans more than animals.”
- **Argument or exposition?**
- **Argument:** One or more premises offered in support of a claim or conclusion

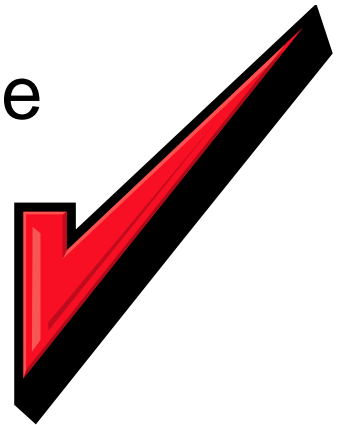


Good & Bad Reasoning

Cogent (convincing/persuasive) reasoning satisfies 3 conditions:

- 1) The premises are believable, warranted, justified given what we already know.
- 2) We consider all likely relevant information
- 3) Our reasoning is valid, meaning the premises provide good grounds for the conclusion

Fallacious (false/erroneous) reasoning fails these conditions



Deductive Reasoning

If all premises are true, then the conclusion must be true:

- 1) If a wire is made of copper, it will conduct electricity.
- 2) This wire is made of copper.
- ∴ 3) This wire will conduct electricity.

(The *Modus Ponens* Form of argument)



Modus Ponens Argument Format

1) If A then B .

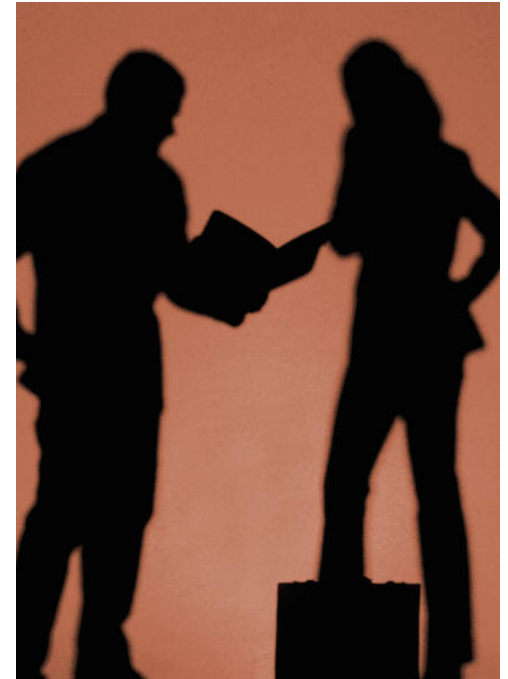
2) A .

\therefore 3) B .

1) Every birthday we get a year older.

2) Today is your birthday.

\therefore 3) You are one year older.



Inductive Reasoning

**Conclusions drawn from
prior experience:**

*“The tooth fairy turned out not
to be real. The Easter Bunny
turned out not to be real ...*

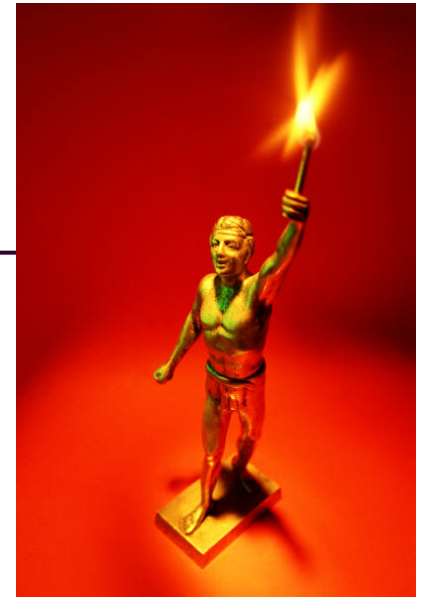
*So I’m beginning to wonder
about Santa.”*

Conclusions go beyond what
may be contained in their
premises.



Premise Background Beliefs

- Beliefs about matters of fact:
Snow is white
- Beliefs about values: *Truth is good*
- Worldviews and philosophies:
It's wrong to betray a friend; all people are created equal; people are fundamentally good; people are fundamentally evil; people can't be trusted; people can be trusted; always do the right thing; always look out for number one



More on Deductive Validity

Modus ponens arguments:

- 1) If A then B .
- 2) A .
- ∴ 3) B .



- 1) If it's spring then birds are chirping.
- 2) It is spring.
- ∴ 3) The birds are chirping.

Modus Tollens

- 1) If A then B .
- 2) Not B .
- \therefore 3) Not A .



- 1) If it's spring, then the birds are chirping
- 2) The birds aren't chirping.
- \therefore 3) It isn't spring.

Hypothetical Syllogism

- 1) If *A* then *B*.
- 2) If *B* then *C*.
- ∴ 3) If *A* then *C*.



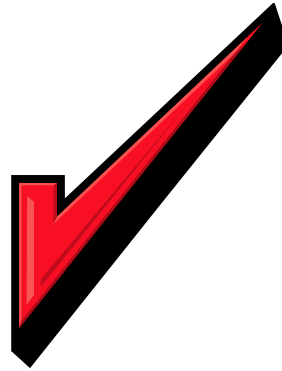
- 1) If we successfully develop nuclear fusion power, then power will become cheap and plentiful.
- 2) If power becomes cheap and plentiful, then the economy will flourish.
- ∴ 3) If we successfully develop nuclear fusion power, then the economy will flourish.

Disjunctive Syllogism

1) A or B .

2) Not A .

\therefore 3) B .



1) Either Sam or Susie won the argument.

2) Sam didn't win.

\therefore 3) Susie did.

Deductive Invalidity

Fallacy of Denying the Antecedent:

- 1) If A then B
- 2) Not A
- ∴ 3) Not B



Example:

- 1) If Sam lies, then it's wrong
- 2) But Sam doesn't lie
- ∴ 3) Sam isn't wrong

Deductive Invalidity

Fallacy of Affirming the Consequent:

- 1) If A then B
- 2) B
- ∴ 3) A

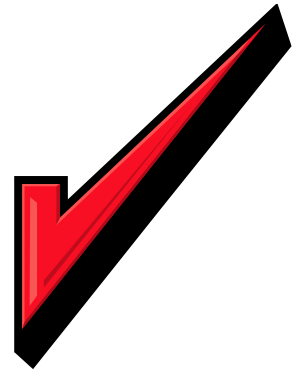


Example:

- 1) If Sam lies, then it's wrong
- 2) Sam is wrong
- ∴ 3) Sam lies

Tautologies, Contradictions, Contingencies

- **Tautology:** a logically or necessarily true statement
- **Example:** Sam is telling the truth or he isn't
- **Contradiction:** a statement that is necessarily false
- **Example:** Susie is telling the truth and she isn't
- **Contingent statement:** Sam and Susie are conversing



Persuasive Logic & Reasoning

Unit 2

Fallacies

Steven R. Van Hook, PhD

Unit 2

Persuasive Logic & Reason
Steven R. Van Hook, PhD

FALLACIOUS REASONING

Types of Fallacies: *Appeal to Authority*

Appeal to Authority: accepting the word of an authority or expert when we shouldn't

Example: global warming is real / global warming isn't real

Criteria for avoiding fallacy:

- 1) Does the source have reliable information and good judgment?
- 2) Can we trust the authority to tell us straight?
- 3) Are we able to understand the expert's reasoning?

Types of Fallacies:

Inconsistency & Straw Men

Inconsistency: an argument with contradictory statements

Example: “A drug free society – I’ll drink to that!”

Straw Man: misrepresenting an opponent’s position

Example: “Susie says I’m lying, so Susie doesn’t have faith in people.”



Types of Fallacies: *False Dilemma*

The False Dilemma and Either-Or Fallacy:

Either P or Q

Not P

Therefore Q

Example: “We must do everything Sam says, or we have no chance of survival.”

Fallacy: Aren't there other ideas that might help us survive other than Sam's?



Types of Fallacies: *Begging the Question*

Begging (or avoiding) the Question:

A.

Therefore, A.

Example: “The reason there is so much demand for this product is because everyone wants one.”



Example of Evading the Issue: “Let me answer that question about my police record by telling you the story of my life ...” (a politician’s tactic)

Types of Fallacies: *Misdirection Tricks*

Questionable Premise:

“Budweiser is the best beer, so everyone should drink Bud.”



Overlooked evidence:

“How college students choose proves that Bud is the best beer.” (Do more expensive beers score higher with higher-income groups?)

Tokenism: “If anyone can prove there’s a better beer than Bud in all the free world, we’ll give every student at Charter College a free six pack!”

Fallacies: Ad Hominem

Ad Hominem: “to the person”

- An irrelevant attack on an opponent rather than the issue: “You’re a big stupid idiot!”

Guilt by association: mistakenly judging people by the company they keep. Someone who hangs out with delinquents may be a counselor or mentor.



Fallacies: Two Wrongs Make a Right

- **Two wrongs make a right** (or *tu quoque* – “you’re another”): you hurt me, I hurt you

Variations:

- **Fighting fire with fire:** e.g., lethal self-defense
- **Common practice:** a wrong is justified by customary behavior
- **Traditional wisdom:** wrong is justified because that’s the way it’s always been



Fallacies: Irrelevant Reason

Irrelevant Reason / Non Sequitur:

- Trying to prove something with irrelevant evidence
- “Antiwar protestors are wrong because their talk tells the enemy we don’t have the resolve to fight”



Fallacies: Equivocation

Equivocation, ambiguity: a way of behaving or speaking that is not clear or definite and is intended to avoid or hide the truth

- “The rule is jam tomorrow and jam yesterday—but never jam *today* ... It’s jam every *other* day: today isn’t any *other* day, you know.”

(*Through the Looking Glass*, Lewis Carroll)



Fallacies: Appeal to Ignorance

Appeal to ignorance: arguing the failure to find evidence to refute a claim, justifies believing it's true

- “There is no intelligent life on other planets since no one has been able to prove there is”



- **Note:** Sometimes the failure of appropriate searches does support a rejection of a claim – “After digging deep into the refrigerator, I believe there is no ice cream there.”

Fallacies: Composition & Division

Composition: assuming an item has a certain property because it's parts have that property

- ***Sample***: assuming a car is inexpensive because of a low down-payment and low monthly payments

Division: Assuming that all or most parts of an item have a property because the whole item has it

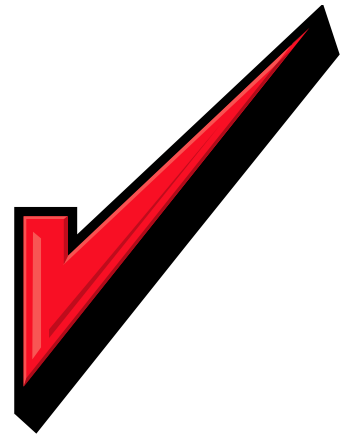
- ***Sample***: Assuming the rooms in a large hotel are large



Fallacies: Slippery Slope

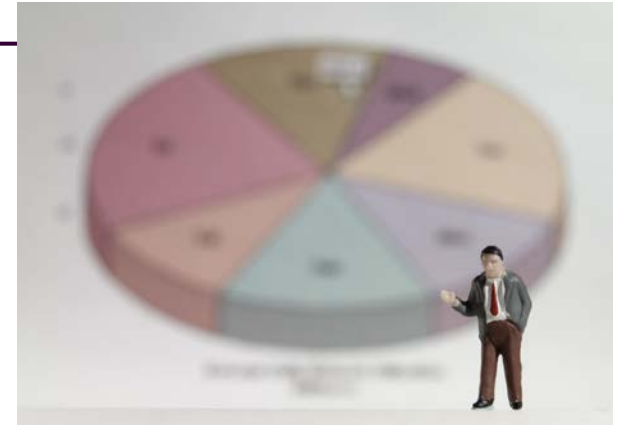
Slippery slope argument: Accepting a claim that a slope is slippery when there is insufficient reason to justify the claim

- ***Sample***: A single-payer health plan will lead to the creation of a socialist state
- ***Sample***: Controls on the sale of hand guns will lead to a ban on all types of guns



Quotations on Calculations

- “Figures don’t lie, but liars figure.” – Anon
- “There are lies, damn lies, and statistics.” – Benjamin Disraeli
- “It’s very difficult to make predictions, especially about the future.” – Casey Stengel



Fallacies: Hasty Conclusion

Hasty conclusion: assumptions drawn from relevant but insufficient evidence.

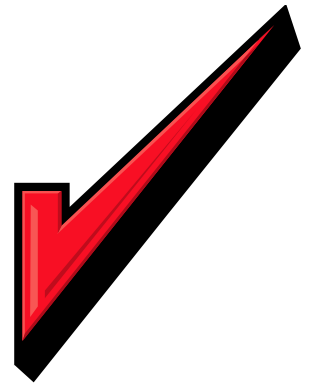
- ***Example:*** Judging a book by its cover.
- ***Example:*** Assuming a teacher might be interesting and informative based on a single opening lecture.



Fallacies: Small Sample

Small Sample: Drawing conclusions about a population based on a sample that is too small to be representative

- ***Example***: Mating habits of primates based on sample of three humans, a gibbon, and a troop of baboons
- ***Example***: Spending habits of college students based on survey of Charter College evening class



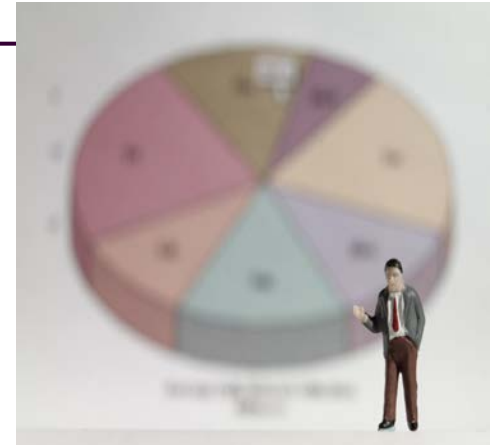
Fallacies: Unrepresentative Sample

Unrepresentative Sample

(also called biased statistics):

Reasoning from a sample not representative (typical) of the population from which it was drawn

- **Example:** Spending habits of college students based on survey of all Charter College classes



Fallacies: Questionable Cause

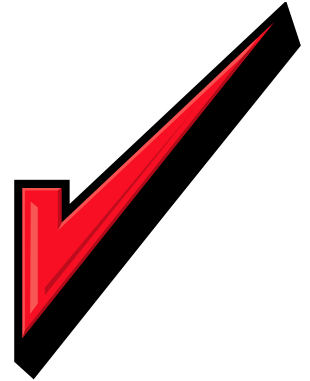
- **Questionable Cause**: Labeling A as the cause of B based on insufficient evidence
- *Post hoc, ergo propter hoc*: “after this, therefore because of this”
- ***Example***: It rained after I danced a tango under the moon, therefore tangos cause rain
- ***Example***: The economy turned sour after the President was elected, so it must be the President’s fault



Fallacies: Questionable Analogy

Questionable Analogy

(or faulty comparison): drawing an analogical conclusion when compared cases are not relevantly alike



- **Example:** When a driver kills a child in the car, we blame the driver, not the car. But when someone is killed with a gun, we condemn guns.

(Is it right to compare guns and cars?)

Fallacies: Questionable Statistics

Questionable Statistics: Employing statistics that are questionable without further support

- ***Example***: Unknowable statistics about how many wars have been fought over the last 5,000 years, and how many people died in them



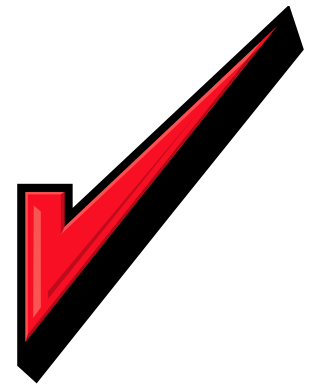
- **Margin of Error**: an amount that you allow when you calculate something, for the possibility that a number is not completely accurate

Fallacies: Questionable uses of Good Statistics

Questionable Uses of Good Statistics:

perfectly good statistics inappropriately applied, sometimes in attempts to bamboozle

- **Example:** Accepting evidence that higher murder rates in states *with* a death penalty is proof that capital punishment as a deterrent doesn't work (*fallacy: other factors may contribute to the high murder rates*)



Fallacies: Poll Problems



Problems with Polls (surveys):

- Misleading ways that questions are presented
(*“Just how much do you love Twinkies?”*)
- Asking the wrong question
(*“Do you think recycling is good” vrs “How much effort do you put into recycling?”*)
- Respondents don’t want to appear ignorant, immoral, odd, prejudiced
(Q. *“Do you watch PBS?”* A. *“Of course!”*)
- Sample is too small or unrepresentative

Fallacies: False Charge of Fallacy

False charge of fallacy: erroneously accusing others of fallacious reasoning

- ***Example***: Accusing scientists of a *fallacy* for changing their minds about the mathematical abilities of women in light of new evidence



- **Quibbling**: Excessive criticizing of another's reasoning (e.g., "*The 100,000 cited doctors who quit smoking may have been horse doctors or doctors of literature, not MDs*")

Summary: Types of Fallacies

- Appeal to Authority
- Inconsistency
- Straw Man
- False Dilemma
- Begging the Question
- Misdirection
 - > Questionable Premise
 - > Overlooked Evidence
 - > Tokenism

Summary: Types of Fallacies

- Ad Hominem
- Guilt by Association
- Two Wrongs Make a Right
- Irrelevant Reason
- Equivocation
- Appeal to Ignorance
- Composition and Division
- Slippery Slope

Summary: Types of Fallacies

- Hasty Conclusion
- Small Sample
- Unrepresentative Sample
- Questionable Cause
- Questionable Analogy
- Questionable Statistics
- Questionable use of Good Statistics
- Poll Problems
- False Charge of Fallacy
- Quibbling

Persuasive Logic & Reasoning

Unit 3

Persuading Others

Steven R. Van Hook, PhD

Unit 3

Persuasive Logic & Reason
Steven R. Van Hook, PhD

PSYCHOLOGICAL IMPEDIMENTS TO COGENT REASONING

Psychological Impediments to Reason:

Loyalty, Provincialism, Herding

- **Loyalty**: skewed reasoning from seeing our own society or group in more favorable light than evidence warrants
- **Provincialism**: narrowed interests in what goes on beyond our group's borders
- **Herd Instinct**: we tend to believe what others in our group believe
- **Culture Lag**: hanging on to beliefs long after they are no longer useful



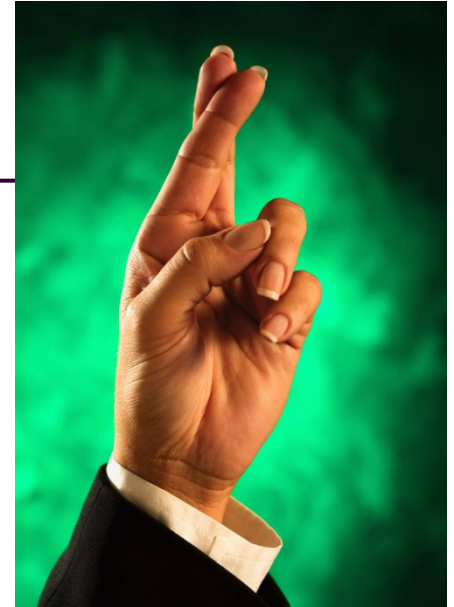
Psychological Impediments to Reason: Prejudice, Stereotypes, Scapegoats

- **Prejudice**: Prejudging others in a group and thinking in unverified stereotypes
- **Stereotypes**: “Jewish people make good bankers”
- **Scapegoats**: Blaming others for our own troubles (“immigrants cost me my job”)
- **Partisan Mind-Set**: “Us against Them”; “Liberals versus Conservatives”
(good reasoners seek truth rather than affiliation)



Psychological Impediments to Reason: Superstitious Beliefs

- **Superstitions**: beliefs often supported with small amounts of evidence
- ***Examples***: Bad things happen on Friday the 13th (sometimes good things happen on those days, and bad things happen on others);
- Stepping on cracks breaks mothers' backs (limited evidence for that)



Psychological Impediments to Reason:

Wishful Thinking & Self-Deception

- **Wishful Thinking**: believing what we want to believe, no matter the evidence
- **Self-Deception**: consciously believing what we know deep down may well be untrue
- **Delusion**: the state of believing things that are not true



Psychological Impediments to Reason: Rationalization, Procrastination, Etc.

- **Rationalization**: ignoring or denying unpleasant evidence to feel justified in our beliefs
- **Procrastination**: putting off till tomorrow what needs to be done today
- **Suppression**: avoiding stressful thoughts by not thinking about them
- **Denial**: reinterpreting threat as something more benign



Summary: Impediments to Cogent Reasoning

- Loyalty
- Provincialism
- Herd Instinct
- Culture Lag
- Prejudice
- Stereotypes
- Scapegoats
- Partisan Mindset
- Superstitious Belief
- Wishful Thinking
- Self-Deception
- Delusion
- Rationalization
- Procrastination
- Suppression
- Denial

Unit 3

Persuasive Logic & Reason
Steven R. Van Hook, PhD

LANGUAGE

Cognitive & Emotive Meanings

Cognitive Meaning: words that refer to things, events, properties (head)

- **Example:** the staff meeting is tomorrow

Emotive Meaning: words with positive and negative overtones (heart)

- **Examples:** I love peace and freedom

Positive overtone: Public Servant

Neutral overtone: Government official

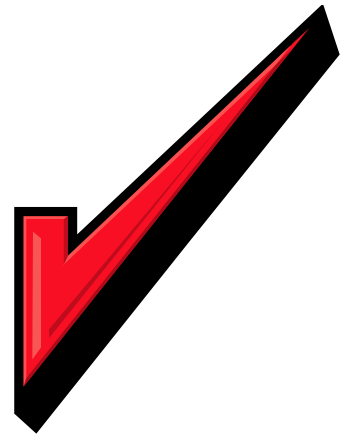
Negative overtone: Bureaucrat



Emotive/Persuasive Uses of Language

Samples:

- “I am firm, you are obstinate, he is pigheaded”
- ‘Incursion’ rather than ‘invasion’
- ‘Enhanced interrogation technique’ rather than ‘torture’
- ‘Ethnic cleansing’ rather than ‘genocide’
- ‘Ancient forests’ rather than old trees



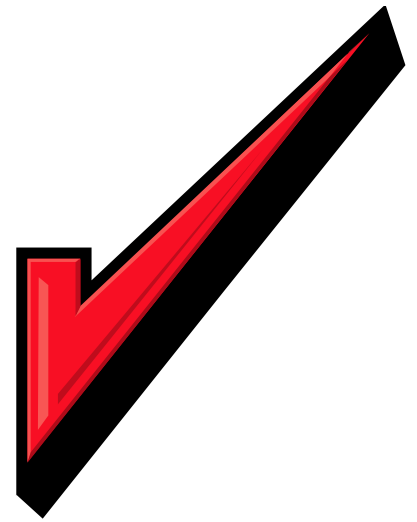
Euphemisms for 'Fired'

- Bumped, decruited, de hired, deselected, discontinued, disemployed, dislocated, downsized, excessed, involuntarily separated, nonretained, nonrenewed, severed, surplusssed, transitioned, vocationally relocated



Other Common Rhetorical Devices

- **Tone:** compassion, anger, levity, humility, congeniality, supportive, accusative
- **Slanting:** a form of misrepresentation – “And as you can clearly see ...” “This is obviously ...”
- **Weasel Words:** “This is arguably true ...” “It may be that I didn’t do it” – they ‘suck’ the content out of a word or phrase



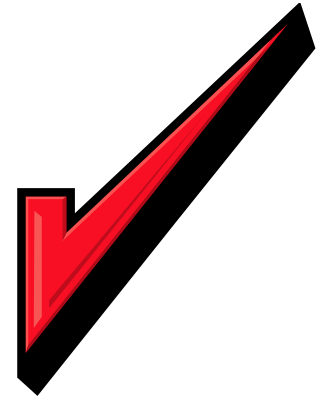
Other Common Rhetorical Devices

- **Fine-Print Disclaimers:**
“Other restrictions may apply”
“Other duties as assigned”
- **Obfuscation:** to render indistinct or dim. “Beware of and eschew pompous prolixity”
– Charles Beardsley



Language Manipulators

- **Control of Definition:** ‘Conservative: a statesman who is enamored of existing evils, whereas a Liberal wishes to replace them with others’
 - Ambrose Bierce; “It means just what I choose it to mean ... which is the master?”
 - Humpty Dumpty, *Alice in Wonderland*
- **Framing Public Policy:** Rather than eat hamburgers that are 10% fat, you should eat hamburgers that are 90% lean. Rather than I am wrong 20% of the time, I’m right 80%.



Language Revision

- **Reforms of Sexist Language:**
“All men are created equal”; now
“All persons are created equal.”
Rather than ‘manhole cover’ now
‘person hole cover’; s/he; use
plural ‘they’
- **Politically (in)Correct (PC)**
Terms: Dutch treat; Welsh on a
deal; Jew them down on a deal;
handicapped



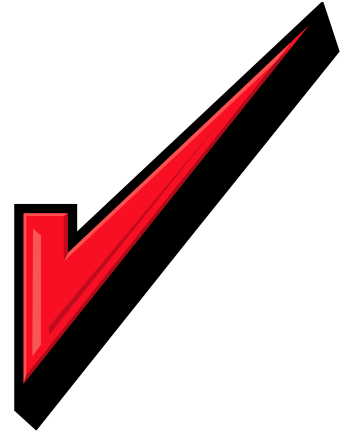
Unit 3

Persuasive Logic & Reason
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EVALUATING EXTENDED ARGUMENTS

Aspects of Argument

- **Pro & Con Arguments:** answers both questions in favor and opposed to a thesis (“On one hand ... on the other hand” – framing the issue)
- **Refutation to Counterarguments:** “My opponent may argue ...” (creating a strawman?)
- **Comparison of Alternatives:** “This option may be the best, but let’s look at the alternatives ...”



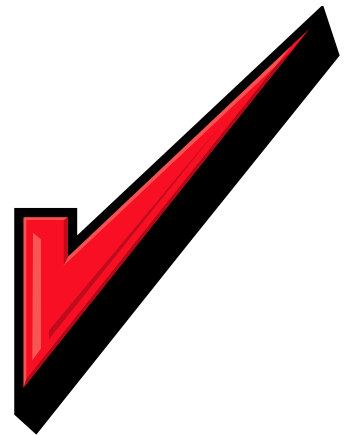
Basic Tasks of Essay Evaluation - 1

- **Locating the Thesis:** the conclusion, the main point the premises support
- **Supporting the Thesis:** what reasons (premises) support the conclusion (e.g., Thesis: Smoking should be made illegal. Reasons: Smoking is deadly; smoking hurts others)
- **Identify the Evidence:** Facts that support the reasons (what proof is there that smoking is deadly)



Basic Tasks of Essay Evaluation - 2

- **Identify Responses to Objections:**
how will you counter arguments to the contrary of your own?
- **Skip Irrelevant Arguments:** don't overwhelm your reader/listener with material not directly related
- **Add Relevant Information:**
Impossible to include everything, so select the very best information.



Basic Tasks of Essay Evaluation - 3

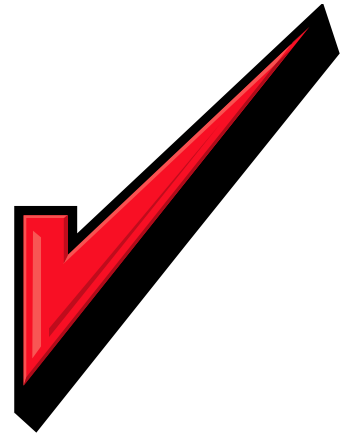
- **Consider Tone and Emotive Language:** while not *argumentative*, tone can work as a subtle manipulator
- **Come to an Evaluation:** Is the argument cogent? Is the argument fallacious? Is the thesis acceptable? What else is necessary to make it so?



Margin Note & Summary Method

Margin Note & Summary Method:

- 1) Read through the material to be summarized
- 2) Read through it again, marking important passages with a note in the margin
- 3) Use margin notes to summarize passages for premises and conclusions
- 4) Evaluate the essay by evaluating your summary



Extended Evaluation of Argument

Extended evaluation of an argument:

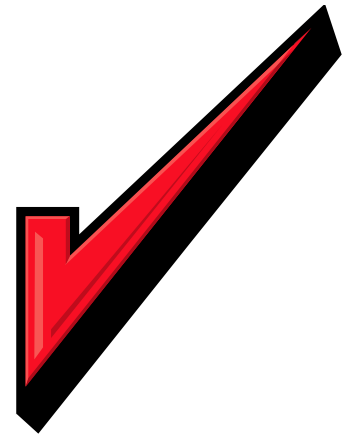
- 1) Summarize an article using the Margin Note Method
- 2) Identify the thesis and main points of the argument
- 3) Determine if the argument is convincing: do the arguments defend the thesis or are they fallacious? Is the evidence plausible? Are counterarguments covered? Is the emotive language manipulative? Does the worldview convince?



Dealing with Value Claims

Dealing with Value Claims: Make a distinction between irrefutable claims of fact, and debatable claims of value

- **Fact:** Sugar sweetens coffee
- **Value Claim:** sweet coffee tastes better
- **Fact:** wealth provides financial power
- **Value Claim:** wealth is a worthwhile pursuit



Evaluating Ironic Works

Irony is a subtle form of humor which involves saying things that you do not mean.

- “Opposition parties lost no time in stressing the irony of his return to power after being rejected by voters in November”



Unit 3

Persuasive Logic & Reason
Steven R. Van Hook, PhD

PREPARING COGENT (AND PERSUASIVE) COMMUNICATIONS

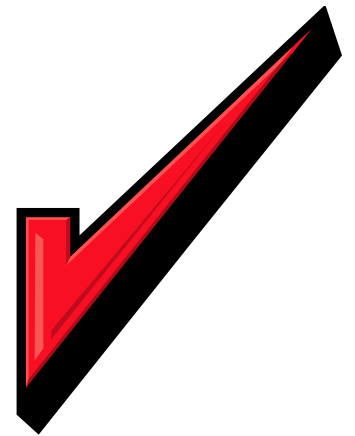
Preparing to Write: Case Study

1. **Determine your precise thesis:**
sample topic
2. **Research:** viable resources
3. **Develop reasons and evidence:**
examples
4. **Address counter arguments:**
avoid misrepresentation
5. **Construct an outline:** intro, body,
conclusion, steps in between



Writing Persuasively

- **Introduction:** introductory remarks, thesis statement
- **Body:** arguments, reasons and evidence offered in support of the thesis
- **Conclusion:** restate thesis, summarize reasoning, premises, conclusions



Supporting Reasons Effectively

- **Provide concrete evidence**
(personal experiences, experiences of others, authoritative sources)
- **Provide transitions** (therefore, however, thus, although ...)
- **Think your position** through carefully
- **Consider your audience:** who are you writing for?
- **Rewrite! Rewrite! Rewrite!**
("I'm not a good writer – but I'm a great re-writer!" – Leon Uris)



More on Cogent Reasoning

- **Cause & Effect:** sufficient condition, necessary condition, proximate cause, remote cause
- **Scientific Method:** observation – hypothesis – experiment – findings – duplication – accept or reject hypothesis
- **Probability:** Divide number of favorable outcomes by number of possible outcomes (a six on a die is $1/6$)
- **Fair Odds:** even money on likelihood of outcome (Las Vegas rarely pays fair odds)



