Informal Fallacies

Goals: Learn the main features of several informal fallacies

The position open in the accounting department should be given to Frank Thomson. He has six kids to feed, and his wife needs an operation.

The sign on the restaurant wall says "No Smoking Rules Enforced." Therefore, we can probably smoke, since the smoking rules aren't enforced.

Jordan Meyer argues against alcohol abuse in fraternities. What a hypocrite! When Jordan was a student he was the biggest binge drinker on campus. His arguments are a joke.

Same-sex marriage should never be allowed. If we allow gays to marry each other, then in no time uncles will marry their nephews and nieces. Then fathers will marry their daughters, mothers will marry their sons, and brothers will marry their sisters. Before long, pet owners will marry their dogs and cats, and this will lead to the complete destruction of civilized life.

Either you support the administration's policies or you don't deserve to be called a patriotic American. The choice should be obvious.
Benjamin Franklin wrote, "Beer is proof that God loves us and wants us to be happy." Therefore, since old Ben would never lie about anything so important as God, we must conclude that God does indeed exist.

Whatever is bright is intelligent. But the sun is extremely bright. Therefore, the sun is extremely intelligent.

Fallacy: an error in reasoning, a case where the conclusion does not follow from the premises.

- **Formal Fallacy**: fallacy related to the form of an argument.
- **Informal Fallacy**: fallacy related to the content of an argument.

**Formal Fallacy**

P1. All cats are animals.
P2. All dogs are animals.
C. So, all cats are dogs. Invalid

**Informal Fallacies**

- **Fallacies of Relevance**: premises may be psychological but not logically related to the conclusion.
- **Fallacies of Weak Induction**: the inductive inference is weak.
- **Fallacies of Presumption, Ambiguity, and Grammatical Analogy**

**Formal Fallacy**

P1. If cats are animals, then they have hearts.
P2. Cats are animals.
C. So, cats have hearts. Valid

P1. If Renée owns a cat, then she owns an animal.
P2. Renée owns an animal.
C. So, Renée owns a cat. Invalid
### Fallacies of Relevance

1. **Appeal to Force** (a physical or psychological threat is used to persuade)

   If $x$ does not accept that $P$, then $Q$.
   
   $Q$ is a threat or attack on $x$.
   
   Therefore, $P$ is true.

   Surely you welcome the opportunity to join our protective organization. Think of all the money you will lose from broken windows, overturned trucks, and damaged merchandise if you don’t join.

2. **Appeal to Pity** (feelings of pity are used to persuade)

   $P$ is presented with the intent to create pity.
   
   Therefore claim $C$ is true.

   I deserve a passing grade in this class. If I don’t pass, I will lose my scholarship and my parents will cut me off.

3. **Appeal to the People** (people’s desire to be included, popular, right is used to persuade)

   Everyone (cool, smart, beautiful, etc.) believes $P$.
   
   Therefore $P$ is true.

   Since 90% of Americans believe God exists, God must exist.
Fallacies of Relevance

4. Argument Against the Person (one attacks the person rather than the argument)
   A. Abusive
   B. Circumstantial
   C. Tu Quoque

President Bush argues in favor of privatizing Social Security. But just look at the man. He can't even pronounce half the words in the English language, he's a notorious liar, and his face looks like it came off the cover of *MAD Magazine*. Bush's arguments are pure trash.

Fallacies of Relevance

B. Ad hominem abusive: There is something objectionable about person X. Therefore, person X's claim is false.

He's physically addicted to nicotine. Of course he defends smoking!

Of course your doctor would be critical of massage therapy and chiropractice! She is an orthopedic surgeon and their business competes with hers.

Fallacies of Relevance

C. Tu Quoque: A makes criticism P. A is also guilty of P. Therefore, P is dismissed.
Republicans claim that Democrats make illegal use of campaign funds. But they do the same thing themselves, so there is no reason to enforce campaign finance laws.

Fallacies of Relevance

5. Accident (applying a general rule to an exception to that rule)

Xs are normally Ys.
A is an X. (Where A is abnormal.)
Therefore, A is a Y.

Fallacies of Relevance

6. Straw Man (easily rejecting a weak straw version of an opponent’s argument)

Evolutionists are espousing the ridiculous claim that human beings are descended from baboons, and are first cousins of orangutans and chimpanzees. But this - and Darwin - is clearly nonsense. So, clearly, God's word reveals the truth of human origins: we are created in the image of God.

Fallacies of Relevance

7. Missing the Point (the premises support a different conclusion)

Used when the speaker does not know how to defend his or her point so uses any old argument and tacks on his or her conclusion.
We can't continue to see people who can't afford decent housing living in the streets. So it is obvious that you should support the new housing bill.

So you think that doctor-assisted suicide is morally acceptable? You probably also think that an unborn human being is just a 'choice'.

So it is obvious that you should support the new housing bill.

Fallacies of Relevance

8. Red Herring (one's attention is diverted to a different, but related subject)

Topic A is under discussion.
Topic B is introduced under the guise of being relevant to topic A.
Topic A is abandoned.

Review

Appeal to force: P is true or you will get hurt.
Appeal to the people: appeal to mob mentality, desire to fit in
Ad hom. abusive: verbal abuse
Ad hom. circumstantial: attacks opponent as predisposed to defend this position
Tu quoque: opponent is hypocrite
Accident: General rule applied to an exception to that rule or a different case

Review

Straw Man: Presents a weak, easily defeated version of an opponent's argument.

Missing Point: Draws a conclusion that does not follow from the premises.

Red Herring: Aim is to distract. Need not draw a conclusion at all.

Fallacies of Relevance: The premises are logically irrelevant to the conclusion.

Fallacies of Weak Induction: While the premises are logically related to the conclusion, they do not provide strong support for the conclusion.
Fallacies of Weak Induction

9. Appeal to Unqualified Authority (relying on a unqualified, biased, or untrustworthy authority)

\[ X \text{ is an authority with respect to } Ps; \text{ therefore, what } X \text{ says about } Qs \text{ is true. } \]

Oprah says it is not safe to eat hamburger, so it isn’t safe.

Bush says the war in Iraq is justified, so it is.

The maker of this product (magnetic shoe inserts) says that it cures back pain, so it does.

Fallacies of Weak Induction

10. Appeal to Ignorance (from the fact that something is unproven or unknown, one asserts some definite fact about that thing)

\[ \text{No one has proved that } X \text{ is true; therefore, } X \text{ is false (or true).} \]

Since you cannot prove that ghosts do not exist, they must exist.

No one have ever proved that God doesn’t exist, so he must exist.

You can’t prove that it wasn’t the healers touch rather than chemotherapy that cured his cancer, so it is just as likely that god healed him.

Fallacies of Weak Induction

11. Hasty Generalization (from the exception to the rule)

\[ \text{Sample } S, \text{ which is too small, is taken from population } P. \]

\[ \text{Conclusion } C \text{ is drawn about Population } P \text{ based on } S. \]

All my friends cheat on tests, so all students cheat on tests.

That old person is a terrible driver, so all old people are terrible drivers.

Ask: Is the small sample atypical? Is the large sample random?
90% of students on CCU’s campus between the ages of 18 and 22 reported receiving financial support from their parents. So, 90% of all people in this age group still rely on their parents’ support.

**Fallacies of Weak Induction**

12. **False Cause** (a causal relationship is inferred where there is none)

   Event \( x \) is related to (or is followed by) event \( y \).
   Event \( x \) caused event \( y \).

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**Post hoc ergo propter hoc**

"after this, therefore on account of this"

A few days after Margi joined the Democratic Party she got pregnant and lost her job. Therefore, it’s important that you never join up with the Democrats.

Not long after I quit smoking and stopped eating meat, I developed back trouble. So if I start eating meat and smoking, my back pain will go away.

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**Non causa pro causa**

"not the cause for the cause"

Assumes one thing is the cause when it isn’t, the assumption is not based on temporal succession.

Every manager in this company is a woman, so it must be that you have to be a woman to become a manager.

Birds landing in the water causes dolphins and sharks to congregate since you always see them together.

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**Non causa pro causa**

"not the cause for the cause"

Sometimes what is the effect is taken to be the cause. Or, two things are in fact the effects of a common cause.

Gerry started wearing ties to work, and he got a promotion. It must be that a person has to dress a certain way in order to move up in this company.

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**Fallacies of Weak Induction**

13. **Slippery Slope** (arguing that some extreme results will be the consequences of something much less extreme)

   Event \( X \) has occurred (or will or might occur).
   Therefore event \( Y \) will inevitably happen.
We've got to stop them from banning pornography. Once they start banning one form of literature, they will never stop. Next thing you know, they will be burning all the books!

Fallacies of Weak Induction

14. **Weak Analogy** (concluding that two things are alike in one respect because they are alike in another respect)

\[ X \text{ has property } Y. \ Z \text{ is like } X. \ Z \text{ therefore has property } Y. \]

Review

Unqualified authority:
Appeal to Ignorance:
Hasty generalization:
False cause:
Weak analogy:

Other Fallacies

Fallacies of Presumption

15. **Begging the Question** (or circular reasoning presumes that the premises support the conclusion when they do not)

Premises in which the truth of the conclusion is claimed or the truth of the conclusion is assumed (either directly or indirectly).

Only an untrustworthy person would run for office. The fact that politicians are untrustworthy is proof of this.
Other Fallacies

16. **Complex Question** (or loaded question presumes that a question can be answered with a simple “yes” or “no”)

X and Y are unrelated questions. They are combined into question Z, which requires a single answer.

Premise: (Pre-employment psychological testing) Do you agree or disagree?

- “I wish I were not bothered by thoughts about sex.”
- “I believe that my sins are pardonable.”

17. **False Dichotomy** (presumes that an “either…or” statement presents jointly exhaustive alternatives)

Either claim X is true or claim Y is true (when X and Y could both be false). Claim Y is false. Therefore claim X is true.

Premise: Are you with us, or with the forces of racism and oppression?

18. **Suppressed Evidence** (presumes no important evidence has been overlooked)

The fallacy of suppressed evidence occurs when an arguer intentionally omits relevant data.

Premise: Milk causes weight loss.
Other Fallacies

19. **Equivocation** (uses the same word in different meanings in an argument, implying that the word means the same each time around)

There are no convincing arguments in books. In order to be convincing, an argument has to be sound, but arguments written in books clearly do not make any noise.

Other Fallacies

20. **Amphiboly** (ambiguity due to grammar)

March Planned for Next August
Blind Bishop Appointed to See
Patient at Death's Door—Doctors Pull Him Through
Teacher Strikes Idle Kids
Lawyers Give Poor Free Legal Advice
Juvenile Court to Try Shooting Defendant
Killer Sentenced to Die for Second Time in Ten Years
Autos Killing 110 a Day—Let's Resolve to Do Better
Collegians are Turning to Vegetables

Other Fallacies

21. **Composition** (assuming that because all the parts have some characteristic that anything composed of those parts has that characteristic too)

If A is X and B is X then the group to which A and B belong are all X.

All people in this town are idiots. (Presumably because one or two are idiots. But this is a generalization fallacy not a composition fallacy. Cf…..)

The town is an idiot.
Other Fallacies

22. Division (Assuming that because the whole has some characteristic that each of its parts has the same characteristic)

The whole, X, has properties A, B, C, etc. Therefore the parts of X have properties A, B, C, etc.

The ball is blue; therefore, the atoms that make it up are also blue.