Fallacies through vacuity

Philosophy and Logic
Sections 6.1- 6.3
Fallacies: Family Tree

I. Formal Fallacies

II. Informal Fallacies
   A. Fallacies of Clarity
   B. Vacuous arguments
   C. Fallacies of relevance

III. Statistical Fallacies

• We have done (I), (II.A) and (III) in Units 1, 2 and 3, respectively. Today we concentrate on (II.B).
Recall the definition of ‘fallacy’ (introduced in unit 3)

**fallacy** =df a type of argument that (a) tends to be persuasive but (b) does not provide logically adequate grounds for a change in belief.

Note that a fallacy must *tend* to be persuasive. Often, or even most of the time, it succeeds in changing belief, although it need not *always* do so. We hope the study of logic makes them less successful!
The surprise

• That there are *types* of these
• They tend to persuade--they tend to work--even though they *should not* work.
• On average they are successful, but the success is not earned. They cheat.
Think of them as **viruses**.

They attack human reasoning at places where it is vulnerable.

Different types of them are like, you know, different species of virus.

Studying them can serve as an inoculation.

It also helps reveal places where human reasoning is vulnerable.
I. Formal Fallacies

*Formal fallacies* are fallacious in virtue of their logical form. They tend to be persuasive because they *resemble* valid logical forms.

The formal *fallacies* always have a *deductively invalid* form. Find that form, and you have found the fallacy.

Therefore, if it sounds like a "unit 2" argument, I recommend symbolizing it on the spot!
First pair

**Valid form:**

*modus ponens*

\[ P \Rightarrow Q \]
\[ P \]
\[ \underline{\quad} \]
\[ Q \]

**Formal fallacy:**

*Affirming the consequent*

\[ P \Rightarrow Q \]
\[ Q \]
\[ \underline{\quad} \]
\[ P \]
How they work

To the extent that they are persuasive, it is because they resemble valid forms.

They also exploit problems the people have with conditionals and disjunctions. (Remember unit 2!)
Second pair

Valid form:  
*modus tollens*

\[ P \rightarrow Q \]
\[ \sim Q \]
\[ \sim P \]

Formal fallacy:  
*denying the antecedent*

\[ P \rightarrow Q \]
\[ \sim P \]
\[ \sim Q \]
Third pair

Valid form: disjunctive syllogism

\[ P \lor Q \]
\[ \sim P \]

\[ \hline \]
\[ Q \]

Formal fallacy: affirming a disjunct

\[ P \lor Q \]
\[ P \]

\[ \hline \]
\[ \sim Q \]
The three invalid forms

**Affirming the Consequent:** From ‘P \(\supset\) Q’ and ‘Q’, infer ‘P’. (This resembles the valid form Modus Ponens.)

**Denying the Antecedent:** From ‘P \(\supset\) Q’ and ‘\(\sim\)P’, infer ‘\(\sim\)Q’. (This resembles the valid form Modus Tollens.)

**Affirming a Disjunct:** From ‘P v Q’ and ‘P’, infer ‘\(\sim\)Q’. (This resembles the valid form Disjunctive Syllogism.)
A note about the names

**Affirming the Consequent:** From ‘P ⊃ Q’ and ‘Q’, infer ‘P’. (This resembles the valid form Modus Ponens.)

**Denying the Antecedent:** From ‘P ⊃ Q’ and ‘~P’, infer ‘~Q’. (This resembles the valid form Modus Tollens.)

**Affirming a Disjunct:** From ‘P v Q’ and ‘P’, infer ‘~Q’. (This resembles the valid form Disjunctive Syllogism.)

Take the molecular sentence (the conditional or disjunction) as the first premise. Then the names always describe the second premise.
For example, take Denying the Antecedent. The first premise is P ⊃ Q. The antecedent of that is P. So the second premise of Denying the Antecedent is "~P".
A second note about the names

**Affirming the Consequent:** From ‘P ⊃ Q’ and ‘Q’, infer ‘P’.
(This resembles the *valid* form, Modus Ponens.)

**Denying the Antecedent:** From ‘P ⊃ Q’ and ‘¬P’, infer ‘¬Q’.
(This resembles the *valid* form, Modus Tollens.)

**Affirming a Disjunct:** From ‘P v Q’ and ‘P’, infer ‘¬Q’. (This resembles the *valid* form, Disjunctive Syllogism.)

What is more important to remember is *which* of the three forms are valid, and which are invalid.

If you simply symbolize the argument correctly, and then correctly label that form as either valid or invalid, you'll get almost full credit.

(Though if you do that correctly, then the first note will let you deduce the name!)
II. Informal fallacies

Unlike formal fallacies, informal fallacies are not generally recognizable by their forms, but use other tricks to be persuasive.
II. Three kinds

A. Fallacies of clarity (from unit 3)
Fallacies which rely on a **shift in meaning** for their persuasive effect.

B. Vacuous arguments
“Circular” arguments, or others which fail to provide any reasonable grounds for *change* of belief

C. Fallacies of relevance
Arguments which depend upon **some irrelevant emotional appeal** for their persuasive effect
II. A. Fallacies of clarity

Equivocation
Slippery slope
Composition
Division
II. A. Necessary conditions

1. There is some critical term appearing in both a premise and the conclusion.
2. There is a shift in meaning in that term between premise and conclusion.
3. The argument relies on that shift in meaning for its persuasive effect.

That is: if you define the term in just one way, and apply the same definition to both premise and conclusion, the argument is no longer persuasive.
II. A. Differences

Composition and division almost resemble formal fallacies.

– They argue from parts to whole, or from whole to parts. (A class might be the whole, and its members the parts.)

– In one place we apply a term *distributively*, as a property of each part.

– In another place we apply the same term *collectively*, as characterizing the sum of the parts.
THIS JUST IN – NETWORK TV AUDIENCES ARE SHRINKING.
II. A. Differences (cont)

• Equivocation relies on the **ambiguity** of a term.
  – The term must have two distinct dictionary definitions.

• Slippery slope relies on the **vagueness** of a term.
  – We have a “gray zone”. There is no clear borderline between “yes” cases and “no” cases.
  – The argument makes a series of small steps through the borderline zone.
A new kind!

II. B. Vacuous arguments

Empty arguments

Arguments that “don’t go anywhere”.

The paradigm example is circular reasoning: assuming as a premise that which you want to prove as a conclusion.
Characteristics of vacuity

General characteristic: they do not provide logically adequate grounds for any change in belief about the question at hand.

– They do not advance the discussion.
– They do not help anyone get closer to the truth.

They might
(a) Assert the same thing in the conclusion as is asserted in a premise, or
(b) Use as a premise something that is plausible only if you already believe the conclusion.
II.B Vacuous Arguments

An example of **Begging the question:**

Every sentence in the Bible is literally true. After all, the good book says that God wrote the Bible, and, as we all know from its teachings, God is good, and would not lie.
How can you be so sure that you are right about all this?

Because it’s ALL recorded in the Word of God.

All scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness: 2 Timothy 3:16
II.A.1. Begging the Question

• An argument in which one of the premises is the same assertion as the conclusion, or presupposes the truth of the conclusion. (Also known as circular reasoning.)
Begging the Question (cont.)

• General Characteristic: assuming as a premise that which you must prove as a conclusion. Two flavors:
  – One of the premises is the same claim as the conclusion itself, or means the same thing as the conclusion. (Usually, the latter.)
  – One of the premises presupposes a conclusion on one of the matters under dispute. (Such a premise will only be plausible to someone who already accepts the conclusion.)
Example of “first flavor”

The behavior of large corporations weakens our democracy, since their activities subvert our democratic processes.

In standard form:

The activities of large corporations subvert our democratic processes.

Therefore, the behavior of large corporations weakens our democracy.
Example of “first flavor”

The activities of large corporations subvert our democratic processes.

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Therefore, the behavior of large corporations weakens our democracy.

A compelling inference! It is hard to see how the premise could be true but the conclusion false.

But here the conclusion means the same thing as the premise. So we haven't been given any reason for a change of belief. It is "preaching to the choir"!
Example of second “flavor”

It is wrong to kill innocent human beings.
A baby is an innocent human being.
Abortion kills unborn babies.

Therefore, abortion is wrong.

The 3rd premise is the point at dispute in the whole abortion debate. You'd probably accept it only if you already accept the conclusion.

So this is another sort of "preaching to the choir". It provides no reason for a change in belief.
Another example

Every American has the right to be paid a living wage for their labor—a wage on which one support one’s family—since every American has a right to a decent standard of living.
II.B.2. Straw man (from unit 4)

To attack a straw man =df. to attack a weak version of the argument, when clearly there are stronger versions around.

So a “straw man” is a *misrepresentation* of an argument--one which makes it appear to be weak or indefensible.

The opponent's views are made to seem unreasonable, ridiculous, unfounded, or just wrong. Only an idiot could think that.
How straw man works

It is satisfying to see the error in *someone else’s* ways:

*What a stupid argument that is. I must be smart to see the error.*

*One fails to notice that that stupid argument is not the argument of the opponent.*
Deliberate vs. unintentional mispresentation

One does not necessarily "attack a straw man" whenever one makes a mistake in characterizing the views of an opponent. Instead, one must deliberately choose to interpret it as a weak argument, when there are stronger versions available.

So it is a species of misrepresentation. It shows the perpetrator to be an intellectual fraud.
II.B.3. *Ignoratio elenchi  
(Irrelevant Conclusion)

An argument which purports to establish some conclusion P but instead establishes some different and irrelevant conclusion Q.

The * means that this fallacy won't be in the tests at all. Examples of it are too long (and too common!)
As sleight of hand

• The question at issue is P, but it is hard to settle.
  – So instead, give an argument for some slightly different (and irrelevant) conclusion Q.
  – Then pretend it’s the same thing.

• We have a “short circuit” between what you establish and what you claim to establish.
II.B.3. Irrelevant Conclusion

*ignoratio elenchi* $= \text{df.}$ An argument which purports to establish some conclusion $P$, but instead establishes some different and irrelevant conclusion $Q$.

Often called "ignoratio" for short. "That is an ignoratio, sir" shows that you're not ignorant of logic!
Example

A politician is asked some question concerning topic P.

“Do you believe what Kathleen Willey said on 60 Minutes?” (a witness testifying to malfeasance of a famous politician)
If you don’t know the answer to P, answer Q instead, and then pretend it’s the same thing.

“The American public thinks that the prosecutor is out of control, and that we should not be investigating these details of the private life of our great leader. Enough is enough. It has nothing to do with his performance on the job. Our great leader’s job approval is the highest it has ever been, at 64%.”
Three kinds of vacuity

Begging the question
   (“circular reasoning”)

Straw Man

Ignoratio elenchi *
   (Irrelevant conclusion. Also irrelevant for our tests.)
The best test

• Look carefully at the conclusion.
  – Check that it really is a conclusion about the question at hand.
  – Check that it is fair to the opposing side and is not a distortion or exaggeration.
  – Check the premises to make sure that they do not already contain the conclusion.
  – Finally, check that the author does not prove $P$ but claim to prove some distinct $Q$. 
End of vacuity