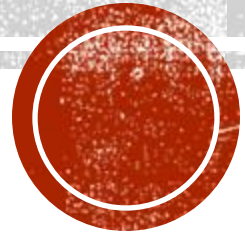
UNIT 6

Fallacies



FALLACIES

- Definition: a fallacy is a type of incorrect argument that may seem to be correct but **actually isn't**
- Note: not all mistaken arguments are fallacies; only **typical errors** are fallacies.

FORMAL FALLACIES

- Two formal fallacies:
- 1) Affirming the Consequent
- 2) Denying the antecedent

- They **look** valid but they aren't

AFFIRMING THE CONSEQUENT

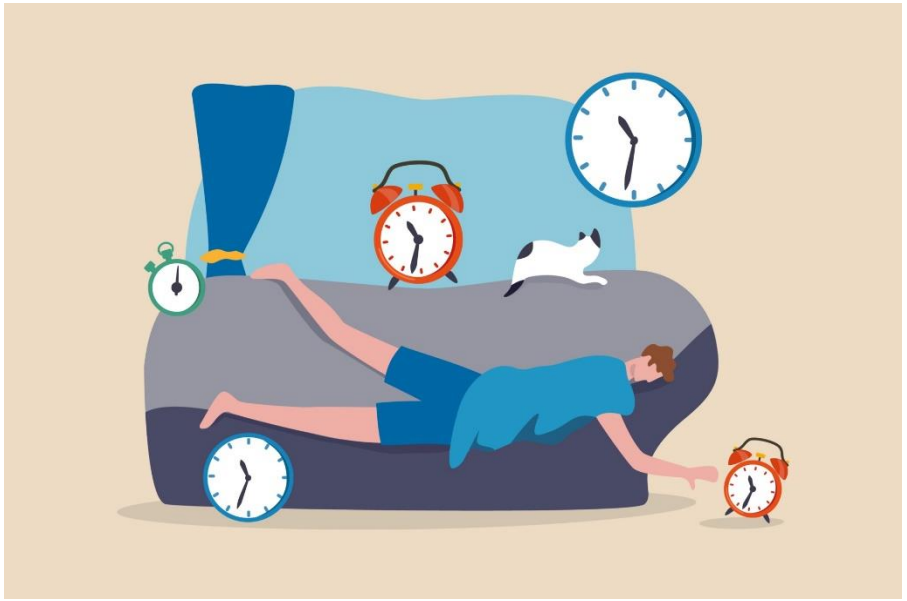
- Structure:

P1: If p then q
P2: q
C: p (P1-2)

- This is not to be confused with modus ponens
- Problem: ignores the possibility that there are **other** conditions apart from P that might lead to Q
- Example

P1: If there is a traffic jam, a colleague will be late for work
P2: A colleague is late for work
C: He was caught in a traffic jam (P1-2)

- But he could have a faulty alarm clock
- **Note**: if P1 is changed to "q iff./only if p", then no fallacy



INVALID OR STRONG?

P1: If it rained last night, then the streets are wet this morning.
P2: The streets are wet this morning.
C: it rained last night. (P1-2)

- *Looks like* affirming the consequent
- **But did the author intend a deductive argument?**
- Probably not.
- If not, then it is (inductively) strong
- **Note: always check if an invalid argument is actually strong**

DENYING THE ANTECEDENT

- Structure:

P1: If p then q
P2: Not p
C: Not q (P1-2)

- This is <u>not to be confused</u> with modus tollens
- Problem: some **alternative** explanation/cause might be overlooked
- <u>Example</u>

P1: If there is a traffic jam, a colleague may be late for work.
P2: there is no traffic jam
C: the colleague will not be late for work (P1-2)

- But his alarm clock could have stopped working

INFORMAL FALLACIES

- There are hundreds of such fallacies
- Here are some of the more common ones (more are in your lecture notes)

AD HOMINEM

- A.k.a. attacking the person
- A theory is discarded <u>not</u> because of any evidence against it or lack of evidence for it, but because of the person who argues for it.
- <u>Example</u>

A: The Government should enact minimum-wage legislation so that workers are not exploited.

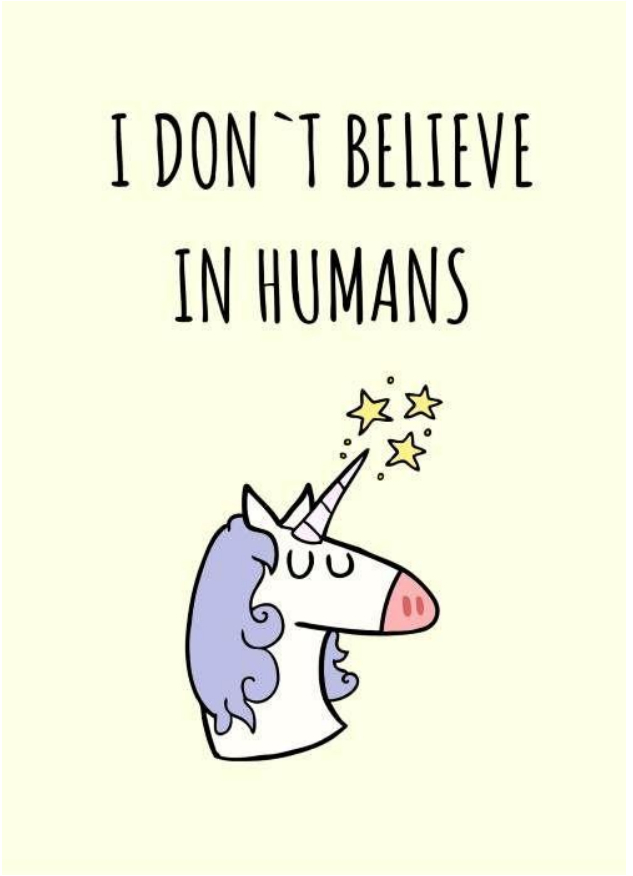
B: Nonsense. You say that only because **you cannot find a good job**.

AD IGNORANTIAM

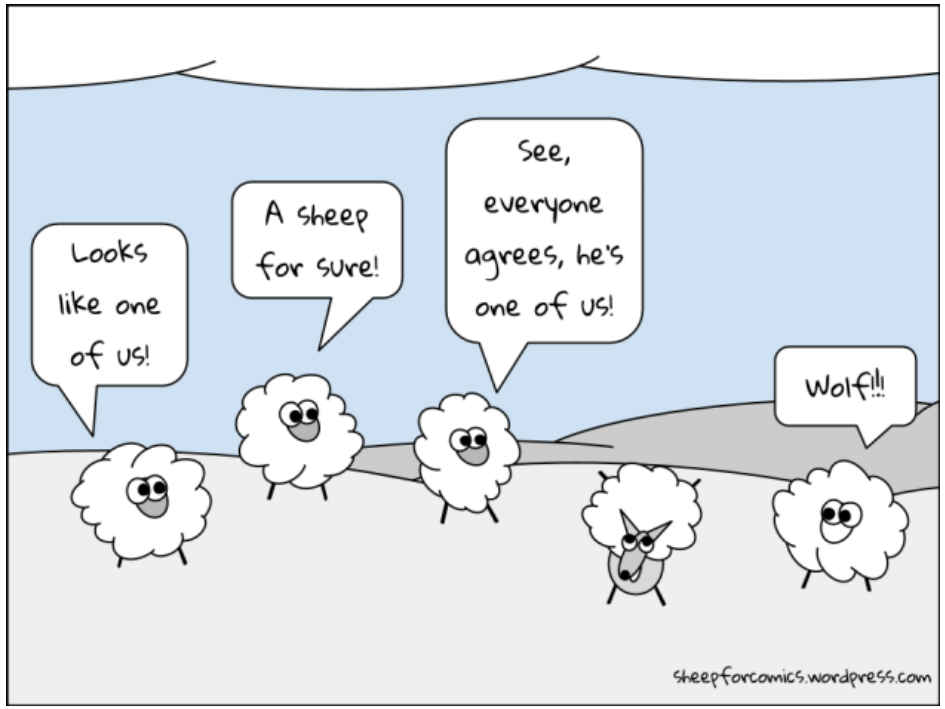
- A.k.a. appeal to ignorance
- The truth of a claim is established only on the basis of **lack of evidence** against it.
- Example

Arguing that unicorns exist because there is no evidence against such a claim.

- Note 1: At first sight it seems that many theories that we describe as scientific involve such a fallacy.
- E.g.: the first law of thermodynamics holds because so far, there has not been any negative instance that would serve as evidence against it.
- But here, there is positive evidence for the scientific law
- Note 2: where there are **only 2** rival claims, the falsification of one claim (C1) without evidence for/against the other claim (C2) is **sufficient** to establish C2.



AD POPULUM



- A.k.a. appeal to popularity
- The truth of a claim is established **only** on the basis of its **popularity** and **familiarity**.
- Commonly seen in commercials
- <u>Example</u>

P1: Commercial says that X is the city's favourite
C: X is the best of the lot (P1)

- Note: not all appeals to popularity are fallacious
- E.g.: where is the MRT station? Look to where most people are heading towards

AD VERECUNDIAM

- A.k.a. appeal to **false** authority
- When the premises of an argument appeal to the judgment of some party having **no legitimate claim to authority** in the matter at hand.
- Example

P1: Darwin thinks that we should allow eugenics
C: we should allow eugenics (P1)

- But Darwin is an authority on biology, not morality
- **Note: not all appeals to authority is fallacious**

COMPOSITION

- The *opposite* of the fallacy of division
- The **whole** is assumed to have the same properties as its parts
- <u>Example</u>
- Anne might be humorous and fun-loving and an excellent person to invite to the party. The same might be true of Ben, Chris and David considered individually. But it does not follow that it will be a good idea to invite all of them to the party.
- Perhaps they hate each other and the party will be ruined.

DIVISION

- The opposite of composition
- The **parts** of a whole are assumed to have the same properties of the whole
- Example
- It is possible that, on the whole, a company is very effective, while some of its departments are not.
- It would be inappropriate to assume they all are.

AMPHIBOLY

- When one of the **statements** in an argument has **more than one plausible meaning**, because of the <u>loose or awkward way</u> in which the words in that statement have been combined/ ambiguity in grammar
- The arguer typically selects the *unintended* interpretation and proceeds to draw a conclusion based upon it.
- <u>Example</u>

P1: They said they suspect several people of setting the fire.
P2: I was alone that night
C: I can't be under suspicion (P1-2)

P1 = "several people set the fire together" OR "there are several people who we suspect to have set the fire, be it alone or together"

- Only the former interpretation would make the argument valid but it is probably not what the initial "they" intended

EQUIVOCATION

- Similar (but not the same) to amphiboly
- Putting forward an argument where the conclusion depends on the fact that a **word** (NOT a statement) is used, explicitly or implicitly, in **two different senses**.
- Example

P1: Sean Connery is a star.
P2: All stars are in orbit in outer space.
C: Sean Connery is in orbit in outer space. (P1-2)

- But "stars" in P1 is not the same as in P2

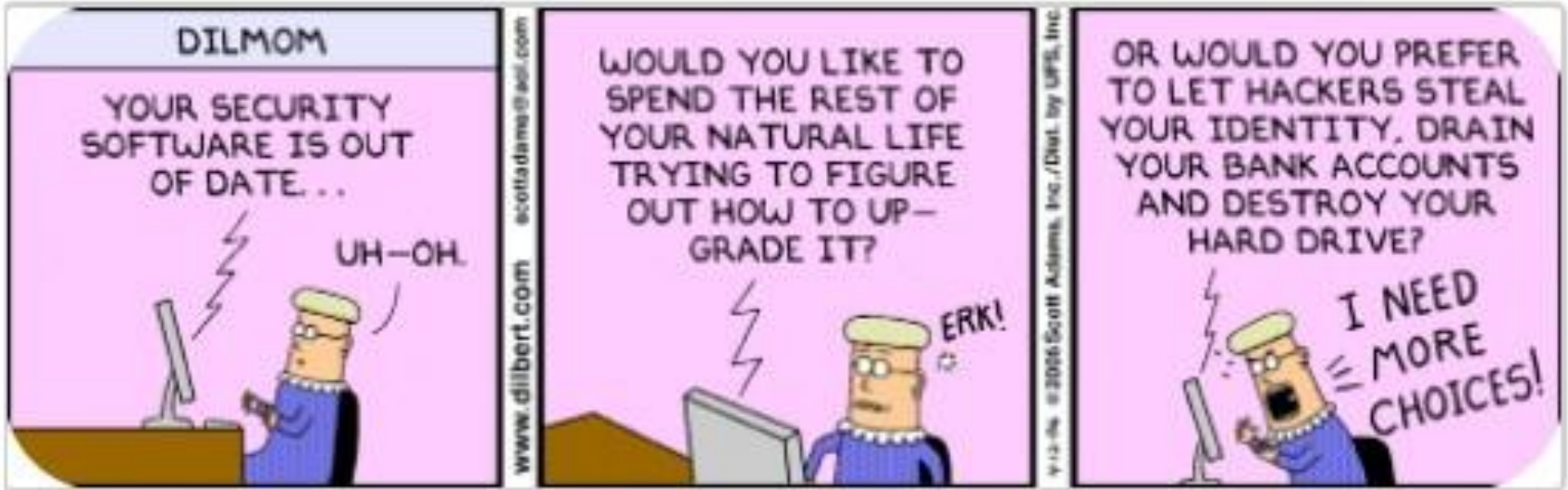
EQUIVOCATION VS AMPHIBOLY

- Common to confuse the two
- 2 ways in which they are different:
- 1) equivocation is always traced to an ambiguity in the meaning of a *word* or *phrase*, whereas amphiboly involves a syntactical ambiguity in a *statement*.
- 2) **amphiboly** usually involves a mistake made by the arguer in interpreting an ambiguous statement made by **someone else**, whereas the ambiguity in equivocation is typically the arguer's own creation.

FALSE DILEMMA

- Presenting a **limited set of alternatives** when there are others that are worth considering in the context.
- Example

P1: Every person is either my enemy or my friend.
P2: If he is my enemy I should hate him.
P3: If he is my friend I should love him.
C: I should either love himor hate him (P1-3)
But most people are neither your enemy nor your friend



FALSE CAUSE & POST HOC, ERGO PROPTER HOC

- Basically, when one treats as the cause of a thing what is **not really the cause** of that thing
- More generally, when one blunders in reasoning that is based upon causal relations
- The latter is a variation of False Cause – inferring that X must be the cause of Y just because X is followed by Y
- <u>Example</u>

P1: Whenever I wear green socks, my logic grade goes up
C: wearing my green socks causes my logic grade to go up (P1)

SLIPPERY SLOPE

- Arguing that **if** an opponent were to accept some claim C1, **then** he or she has to accept some other closely related claim C2…

  which **in turn** commits the opponent to a still further claim C3…

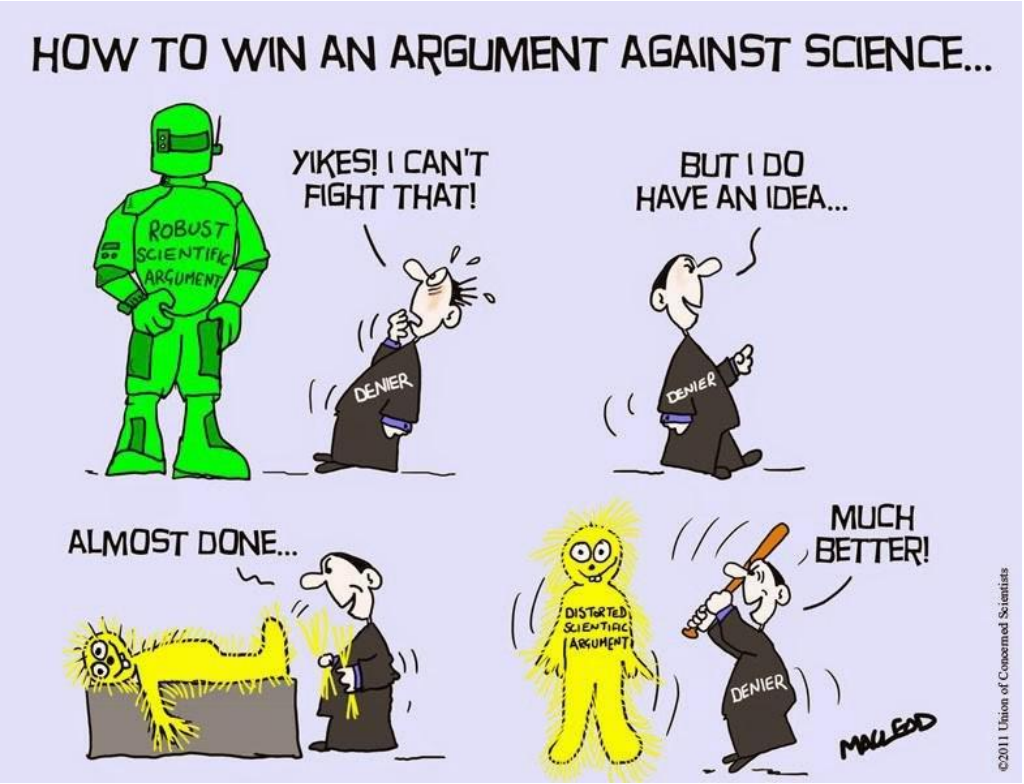
  eventually leading to the conclusion that the opponent is committed to something **absurd or obviously unacceptable**.

- Example

The government should not prohibit drugs. Otherwise, the government should also ban alcohol or cigarettes. And then fatty food and junk food would have to be regulated too. The next thing you know, the government would force us to brush our teeth and do exercises everyday.

- **Note: not always a fallacy**; only when it is inappropriate to think if one were to accept the initial claim, one must accept all the other claims

STRAWMAN



- Attacking an opponent by **attributing to him/her an implausible position** that is easily defeated when this is not actually the opponent's position.
- Example

When many people argue for more democracy in Hong Kong, a typical reply is to say that this is not warranted because it is wrong to think that democracy is the solution to all of Hong Kong's problems, or to say that one should not blindly accept democracy.

- But those who support democracy never suggest that democracy can solve *all* problems (e.g. pollution), and they might also agree that *blindly* accepting something is rarely correct, whether it is democracy or not.
- Those criticisms attack implausible "strawman" positions and **do not address the real arguments** for democracy.

SUPPRESSED EVIDENCE

- This fallacy usually applies to the interpretation of some data or quotation.
- Where there is contradicting evidence, **only confirming evidence** is presented.
- Example

The history of science often reveals the fact that scientists, even famous ones like Ampere, sometimes eliminate contradicting data such that on the whole their experiments support their theories.

HOMEWORK

- Exercise G in lecture notes
- Identify the fallacies in the following passages and explain how each specific passage involves that fallacy or fallacies

LET'S DO A FEW TOGETHER

- 1) It is necessary to confine criminals and to lock up dangerous lunatics. Therefore, there is nothing wrong with depriving people of their liberties.

- First, there are a couple of missing premises here:
  P2) to lock people up is to deprive them of their liberty.
  P3) If it is necessary to lock someone up, then there is nothing wrong with depriving him of his liberties
- Fallacy: Composition/Hasty Generalisation – just because it is okay to lock up certain types of people doesn't mean that we can deprive EVERYONE of their liberties

- 2)The army is notoriously inefficient, so we cannot expect Major Smith to do an efficient job.

- Division – just because the whole is inefficient doesn't mean that the individual is