Chapter 2

What is an argument?

What is an argument? … A short video answer

- Monty Python
  - ”Flying Circus”
  - Title: “Argument Clinic”

  - https://www.youtube.com/watch?v=hnTmBjk-M0c

What is an argument

- Video: “A collection of statements offered to support a definitive proposition.”

- Correct – but lets make it simpler:
- **An argument is one or more statements, called “premises,” offered as evidence or reasons to believe that a further statement, called a “conclusion,” is true.**
- A confusion – our day-to-day usage of the term argument
  - Quarreling and Contradiction vs Logical Argument

The Basics

- The basic expression of logical reasoning is the argument
- Goal of an argument?
- Two parts:
  - 1) Premises – Intended as the reason for accepting the conclusion
  - 2) Conclusions – what is being argued for
    - Call these declarative statements → claims
- Simple – but then why do they get so complicated?

Problem #1

- The number of statements offered
  - Specifically, the number of premises offered
  - Main premises, sub-premises, sub-premises for those sub-premises, and so on …

- Another Issue: What is being given as a conclusion and what is being given as a premise?

- First step: Knowing / figuring out what is argued for and how it is being argued for → the individual parts of the argument

Indicator Terms – Picking out Premises and Conclusions

- <u>Premise Indicators</u>
- "Words or phrases that signal the presence of premises but not conclusions" (pg 34)
- Examples:

since	because
for the reason that	assuming
suppose	as indicated by
is implied by	given that
in view of the fact that	for
granted that	one cannot doubt that

Example: Either Stacy is rich or her parents are, since she drives a Porsche.

Indicator Terms – Picking out Premises and Conclusions

- Conclusion indicators:
  - **Words or phrases that tend to show that what follows is a conclusion for the argument**

- Conclusion Indicators:

Therefore	Consequently	Thus
This means	So	It follows that
This shows that	Implies that	Proves that
Hence	In conclusion	For this reason
Accordingly	The moral is	This means that
We can infer that	As a result	Leads me to believe that
Etc.		

- **Example: Stacy drives a Porsche. Therefore, either she is rich or her parents are.**

Problem #2

- Type of premises were are dealing with
  - 1) Independent Premises
  - 2) Dependent Premises

Independent Premises

- Independent Premises – Premises that *independently* are reasons for the conclusion being true

- Falsity of one of the premises does not in an of itself cancel the support offered by the other premises

- ***Example: (Premise)*** *Raising the speed limit will wear out the highways faster.* ***(Premise)*** *In addition, doing so will result in more highway deaths. (Conclusion) Therefore, we should not raise the speed limit.*

Dependent Premises

- Dependent Premises: The truth of one premise is determined or directly impacted by the truth of another.

- ***Example****: **(Premise)** Raising the speed limit will waste gas. **(Premise)** We do not have any gas to waste. **(Conclusion)** Therefore, we should not raise the speed limit.*

Types of Arguments

- Logic is the study of the standards of correct reasoning – the goal is truth – logicians divide all arguments into two broad categories

- ***Deductive Arguments***

- ***Inductive Arguments***

- Easiest way to understand the difference is to understand the different goals each has

Goals:

- **Deductive arguments: A deductive argument is put forth with the intent of proving its conclusion with complete certainty**
  - Premises - Demonstrate / Prove
- **Inductive Arguments: An inductive argument is put forward with the intent of showing that the conclusion is probably or likely true – though not certainly true – if all its premises are true**
  - Premises - Support (not demonstrate / prove)

- Summary:
  - Deduction – Goal is Certainty
  - Induction – Goal is a level of Probability

Some Examples:

- Deductive Arguments:
  - All dolphins are mammals
  - All mammals are animals
  - Therefore, all dolphins are animals (certainly all dolphins must be mammals)

  - If it rains, then the roof gets wet.
  - It is raining.
  - Therefore, the roof is getting wet (the roof MUST be getting wet).

- Impossible for each of the premises to be true and the conclusion false

Some Examples:

- Inductive Arguments
  - No one has ever rain a mile in less than 3 minutes.
  - Therefore, it is likely no one will ever run a mile in less than three minutes.

  - Brittney Spears has sold out every concert she has given over the past 10 years.
  - Therefore, it is quite probable that she will sell out her next concert.

  - Premises offered as support → Strong or Weak Support / Probability

Evaluating Inductive Arguments: Strong or Weak

- **After 4 PM traffic on the Brooklyn Bridge slows to a crawl.**
- **Therefore, it is probable that traffic will also be slow on the Manhattan Bridge after 4 PM.**

- **Or**

- **After 4 PM traffic on the Brooklyn Bridge, the Williamsburg Bridge and the Queensboro Bridge slows to a crawl.**
- **Therefore, it is probable that traffic will also be slow on the Manhattan Bridge after 4 PM.**

- **Key:** Inductive arguments are evaluated as either strong or weak based on how well the truth of the premises supports the truth of the conclusion

Evaluating Deductive Arguments

- What do we mean by prove and/or demonstrate?
- Two Step Process:
  - **Step 1: Validity** – Is the argument structured such that IF the premises are true the conclusion MUST be true – true by necessity
    - If yes → Valid
    - If no (if the conclusion could still be false even IF the premises are true) → Invalid

- Earlier Example:
  - *All dolphins are mammals*
  - *All mammals are animals*
  - *Therefore, all dolphins are animals*
    - Is this a valid deductive argument?

Evaluating Deductive Arguments

- **Step 2: Soundness**
  - **When a valid deductive argument has true premises = Sound**
  - **When a valid deductive argument has 1 or more false premises = unsound**

- All dolphins are mammals.
- All mammals are animals.
- Therefore, all dolphins are animals.
  - Sound?

What about this one …

- All cars are automobiles
- All automobiles are blue
- Therefore, all cars are blue

- Valid?

- Sound?

And …

- **Every student is a good mathematician. John is a student. Therefore, John is a good mathematician.**

Determining the Type of Argument

- #1: Indicator terms
  - **Deduction Indicator Terms**: Words like “must,” “necessarily,” “certainly,” “for sure,” “definitely,” and “absolutely” indicate deductive arguments
  - **Inductive Indicator Terms**: If you see words like “probable,” “likely” or “it is reasonable to conclude” in the conclusion, you are dealing with an inductive argument

Problem #3: Arguments Can Get Complicated

- Reason #3 – Unstated / Implicit Content

- **(Premise) You cannot check books out of the library without a valid student ID card. (Conclusion) So, John will not be able to check books out of the library.**

Problem: Arguments Can Get Complicated

- Reason #3 – Unstated / Implicit Content

- **(Premise) You cannot check books out of the library without a valid student ID card. (Conclusion) So, John will not be able to check books out of the library.**

- ***Missing Premise: John does not have a valid student ID card.***

- What about the following:
  - **This dog is a pit bull. Therefore, it has strong jaw muscles.**

Unstated Premises

- **This dog is a pit bull. Therefore, it has strong jaw muscles.**
- Missing Premise – Obvious Candidate: **ALL pit bulls have strong jaw muscles.**

  - **That dog is a pit bull.**
  - **All pit bulls have strong jaw muscles.** → **Valid?**
  - **Therefore, that dog has strong jaw muscles.** → **Sound?**

- Issues:
  - 1) Do we know that it is true that ALL pit bulls have strong jaw muscles
  - 2) Do we know that this is what the author or the argument intended?

Author's Intent

- Did the author intend for the argument to be an <u>inductive argument</u>?
  - **That dog is a Pit Bull.**
  - **Most Pit bulls have strong jaw muscles.**
  - **Therefore, that dog *most likely* has strong jaw muscles.**
    - Perhaps – but this is a different argument

- Two Principles - When we encounter unstated premises we need to apply:
  - *1) Principle of Charity*
  - *2) Principle of Fidelity*

Unstated Premises Cont.

- **Jake is related to Donald Trump. Therefore, Jake is rich.**

Unstated Premises Cont.

- **Jake is related to Donald Trump. Therefore, Jake is rich.**
  - Options:
    - 1) Everyone related to Donald Trump is rich.
    - 2) Most people related to Donald Trump are rich.
    - 3) Some people related to Donald Trump are rich.
- Apply the principle of Charity → which would provide the best possible outcome?
  - Which has the best chance
    - (1) demonstrating deduction or (#1)
    - (2) Demonstrating induction (#2 and #3 – yet different levels of probability)

So … Reworked Argument

- Jake is related to Donald Trump.
- Some people related to Donald Trump are rich.
- Therefore, it may be the case that Jake is rich.

Unstated Conclusions

- **#1) We always have Philosophy 4 on Mondays. Today is Monday.**

- **#2) The price of a cup of Starbuck's Coffee is always high when rain ruins the crop in South America and this year South America has seen a lot of rain.**

Unstated Arguments & Things That Look Like Arguments

- Things that look like arguments but may not be arguments?

- Questions:
  - 1) Can an argument contain one claim?
  - 2) Does an argument require a minimum of two people?
  - 3) Are explanations arguments?
    - A) I believe in God because I was raised a Baptist.
    - B) John stole his neighbor's car because he needed to get to work.
    - C) John stole his neighbor's car, for two people saw him do it.
      - **Question: Argument or Explanation?**
      - **We need to be careful that we are dealing with an argument and not a simple explanation for something**

Because: Premise Indicator or Cause

- ”Because” can be a Premise Indicator (see earlier slide)

- However, this is not always the case. Take the following two statements.
  - John missed work today because he is sick.
  - John is sick because he missed work today.
- Which one of these two is an argument?

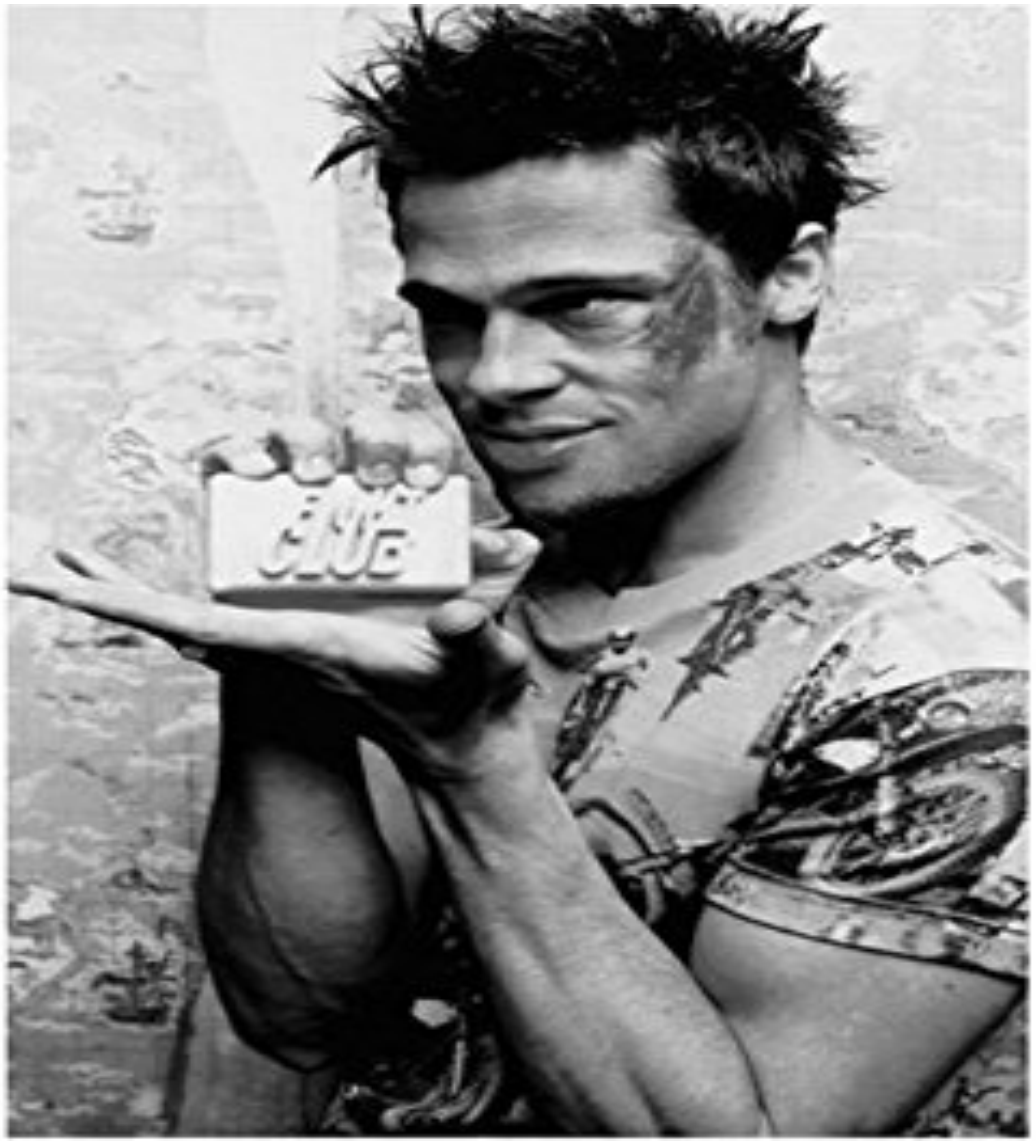
Because: Premise Indicator or Cause

- ”Because” can be a Premise Indicator (see earlier slide)

- However, this is not always the case. Take the following two statements.
  - 1) John missed work today because he is sick.
  - 2) John is sick because he missed work today.
- Which one of these two is an argument?
  - #2 is the argument
    - In #1 what follows because is offered as a cause – the cause of john missing work
    - In #2 what follows because is offered as evidence – Proof of him being sick (not good proof but proof nonetheless)

Is A Photo Advertisement An Argument?

Is A Photo Advertisement An Argument?



- This is not an argument
- Advertisements such as this do not offer ”reasons” why

- However: It may cause YOU to think of a reason – but that is your argument not the ad’s argument

- Pictures are not Premises, Conclusions, or Arguments

- Neither are movies → not true or false