

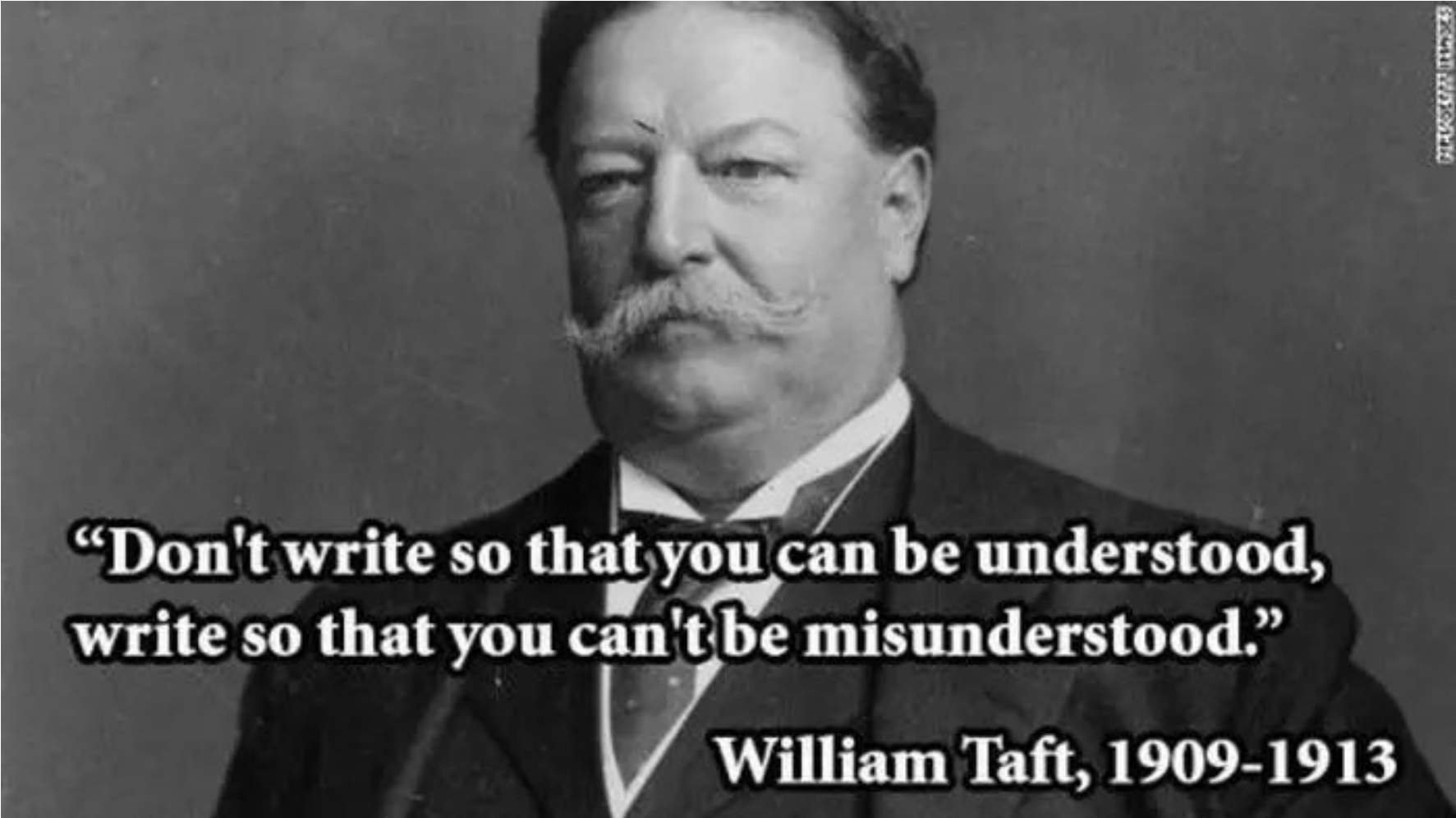
ARGUMENT

& other tools to improve communication

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A black and white portrait of William Taft, a man with a prominent mustache, wearing a dark suit, white shirt, and dark tie. He is looking slightly to the left of the camera with a neutral expression.

**“Don't write so that you can be understood,
write so that you can't be misunderstood.”**

William Taft, 1909-1913

Learning Outcomes

- Outcomes:
 - Be able to 1) define and 2) discern between the terms below; 3) practically identify the terms as used in examples (written and verbal communication); and 4) apply the use of the concepts appropriately in communication:
 - Description
 - Expression
 - Statement
 - Assertion
 - Reasoning
 - Judgement
 - Argument
 - Premise
 - Persuade/Persuasion
 - Proposition
 - Thesis
 - Have available a list of resources to begin investigating how to construct arguments and logical arguments for the purposes of communicating in verbal and written communication

Quiz time!

- Identify the following as:

- Description
- Expression
- Statement
- Assertion
- Reasoning
- Judgement
- Argument
- Premise
- Persuade/Persuasion
- Proposition
- Thesis

1. "This paper argues that the movie JFK is inaccurate in its portrayal of President Kennedy."

2. "In this paper, I will describe the portrayal of President Kennedy that is shown in the movie JFK."

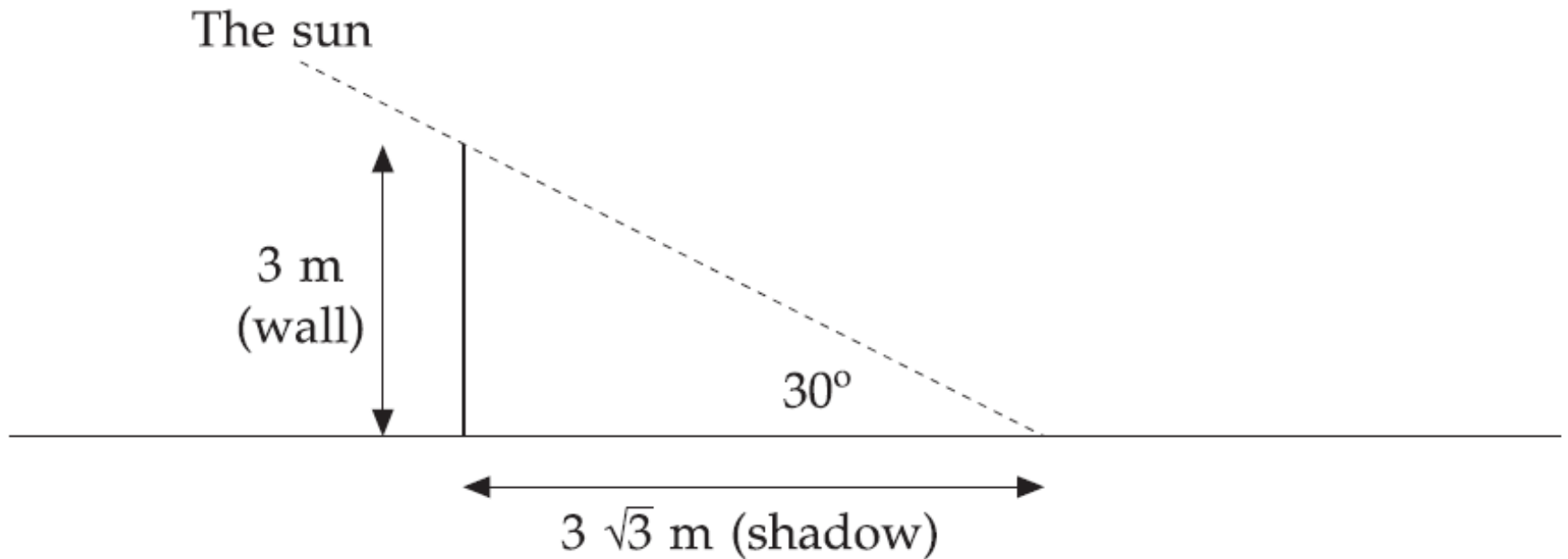
3. "The movie 'JFK' inaccurately portrays President Kennedy."

4. "The movie 'JFK' inaccurately portrays President Kennedy because of the way it ignores Kennedy's youth, his relationship with his father, and the findings of the Warren Commission."

5. "Eleanor Roosevelt was a strong leader as First Lady."

6. "Eleanor Roosevelt recreated the role of the First Lady by her active political leadership in the Democratic Party, by lobbying for national legislation, and by fostering women's leadership in the Democratic Party."

1. Write an argument for this scenario
2. Share with a neighbour



de·scrip·tion

/də'skripSH(ə)n/

noun

1. a spoken or written representation or account of a person, object, or event.
"people who had seen him were able to give a description"
synonyms: [account](#), [report](#), [rendition](#), [explanation](#), [illustration](#); [More](#)
2. a sort, kind, or class of people or things.
"ships of every description"
synonyms: [sort](#), [variety](#), [kind](#), [type](#), [category](#), [order](#), [breed](#), [class](#), [designation](#), [specification](#), [genre](#), [genus](#), [brand](#), [make](#), [character](#), [ilk](#), [stripe](#)
"vehicles of every description"

ex·pres·sion

/ik 'spreʃən/ 

noun

1. the process of making known one's thoughts or feelings.
"his views **found expression** in his moral sermons"
synonyms: [utterance](#), uttering, voicing, [pronouncement](#), [declaration](#), [articulation](#), [assertion](#),
setting forth; [More](#)
2. the look on someone's face that conveys a particular emotion.
"a sad expression"
synonyms: [look](#), [appearance](#), [air](#), [manner](#), [countenance](#), [mien](#)
"an expression of harassed fatigue"

Man Who Thought He'd Lost All Hope
Loses Last Additional Bit Of Hope He
Didn't Even Know He Still Had



state·ment

/ˈstɑːtmənt/ 

noun

a definite or clear expression of something in speech or writing.

"do you agree with this statement?"

synonyms: [declaration](#), expression of views/facts, [affirmation](#), [assertion](#), [announcement](#), [utterance](#), [communication](#), [proclamation](#), [presentation](#), expounding; [More](#)

- an official account of facts, views, or plans, especially one for release to the media.
"the officials issued a joint statement calling for negotiations"
- a formal account of events given by a witness, defendant, or other party to the police or in a court of law.
"she made a statement to the police"

as·ser·tion

/əˈsɜːʃ(ə)n/

noun

a confident and forceful statement of fact or belief.

"his **assertion** that his father had deserted the family"

synonyms: [declaration](#), [contention](#), [statement](#), [claim](#), [opinion](#), [proclamation](#), [announcement](#), [pronouncement](#), [protestation](#), avowal; [More](#)

- the action of stating something or exercising authority confidently and forcefully.
"the assertion of his legal rights"
synonyms: defense of, upholding of; insistence on
"an **assertion** of the right to march"

rea·son·ing

/ˈrēz(ə)niŋg/

noun

the action of thinking about something in a logical, sensible way.

"he explained the **reasoning behind** his decision at a media conference"

judg·ment

/ˈjʌjmənt/ 

noun

noun: **judgement**

1. the ability to make considered decisions or come to sensible conclusions.

"an error of judgment"

synonyms: discernment, acumen, shrewdness, astuteness, sense, common sense, perception, perspicacity, percipience, acuity, discrimination, reckoning, wisdom, wit, judiciousness, prudence, canniness, sharpness, sharp-wittedness, powers of reasoning, reason, logic; [More](#)

ar·gu·ment

/ˈɑːrɡyəmənt/

noun

1. an exchange of diverging or opposite views, typically a heated or angry one.
"I've had an **argument with** my father"
synonyms: quarrel, disagreement, squabble, fight, dispute, wrangle, clash, altercation, feud, contretemps, disputation, falling-out; [More](#)
2. a reason or set of reasons given with the aim of persuading others that an action or idea is right or wrong.
"there is a strong argument for submitting a formal appeal"
synonyms: reasoning, justification, explanation, rationalization; [More](#)

A process of reasoning; series of reasons:

I couldn't follow his argument.

an address or composition intended to convince or persuade; persuasive discourse.

argument

“To argue is to produce considerations designed to support a conclusion.

Either the process of doing, or the product...

Product: the set of propositions adduced (the premises), the pattern of inference and the conclusion reached.

An argument may be deductively valid, in which case the conclusion follows from the **premises**, or it may be persuasive in other ways.


Logic is the study of valid and invalid forms of argument.”

The Syllogism

Using the square of oppositions, Aristotle noticed a mysterious fact. Take a sentence like “Socrates is a man”. If an argument of three statements is built where the subject of the first statement is the predicate of the second (call these the **premises**) and the third statement is composed of the remaining terms (call this the **conclusion**), then the truth of the conclusion is guaranteed by the truth of the premises.

Form of the Syllogism:

1. Premise
2. Premise
3. Conclusion



THIS SCHEMA
I CALL A SYLLOGISM. WE CAN USE
IT TO SEE WHY ONE ARGUMENT IS
TRUE AND ANOTHER FALSE.

1. All men are mortal.
2. Socrates is a man.
3. Socrates is mortal.

VALID

1. Every page of this book
is printed with black ink.
2. Some pages are not
printed with black ink.
3. Those are not pages
of this book.

VALID

1. I support Arsenal.
2. Arsenal are in London.
3. Arsenal will win the cup.

NOT
VALID

Studying Sentences

The Greek philosopher **Aristotle** (384–322 BC) first gave us the idea of a tool (*organon*) to argue convincingly. This study included grammar, rhetoric and a theory of interpretation, as well as logic. The first thing Aristotle does is discuss sentences.



1. **Singular:** Socrates is a man.
2. **Universal:** Every man is mortal.
3. **Particular:** Some men are mortal.

The objects we talk about (e.g., nouns like *Socrates* and *tables*; abstract nouns like *walking*; and pronouns like *someone* and *everyone*) Aristotle calls the **subject** of the sentence.

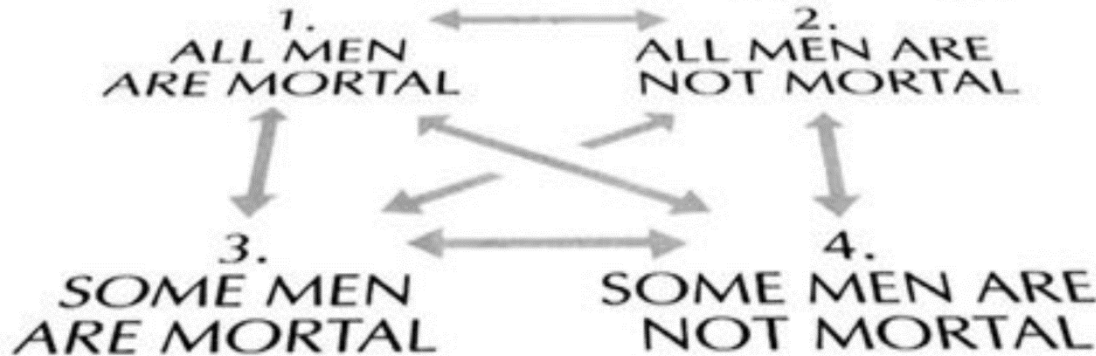
What we say about the subject of the sentence (e.g., verbs like *is eating* and *has fallen*; adjectives like *is difficult*; and nouns like *man* in things like “Socrates is a man”) Aristotle called the **predicate**.

Aristotle noticed that the truth of some subject-predicate sentences has an effect on the truth of other subject-predicate sentences.

Aristotle's Square of Oppositions



THE FOLLOWING SENTENCES STAND IN DEFINITE RELATIONS TO EACH OTHER. I CALL THIS MY SQUARE OF OPPOSITIONS.



Sentences **1** and **2** cannot both be true.

The diagonal statements **1** and **4** are known **contradictories**. As long as there are men, one of them has to be true but never both – the truth of one guarantees that the other is false.

The same is true for the diagonal statements **2** and **3**.

Sentences **1** and **3** can both be true. If **1** is true then **3** must be true, but **3** being true does not mean that **1** must be true.

Similarly with **2** and **4**. The same relation holds between “**All men are mortal**” and “**Socrates is mortal**”.

Types of Argument

Type	Definition	Example	What makes it strong?
Deduction	This form of argument is based on the rules of logic, so if the premises are true, then the conclusion must also be true.	If you smoke, you might get lung cancer. You smoke. Therefore, you might get lung cancer.	Deduction is always strong because it is based on logical connections between premises and conclusion. It is important, however, to establish the truth of the premises.
Induction	This form of argument involves reasoning from particular facts or observations to draw conclusions about general principles.	Ann smoked and she has lung cancer. Emile smoked and he has lung cancer. In fact, every smoker I know now has lung cancer. Therefore, if you smoke you will have a good chance of getting lung cancer.	The strength of inductive arguments depends on the number of observations supporting the generalization. The more observations there are, the more likely the conclusion is true. Note that every counterexample reduces the likelihood that the conclusion is true.
Abduction	The conclusion is considered to be the best explanation of the available facts.	Several studies establish a high correlation between smoking and lung cancer. Additional studies demonstrate that incidence of lung cancer in ex-smokers and non-smokers is much lower. Therefore, it is likely that smoking causes lung cancer.	The strength of abductive arguments depends on the degree to which the conclusion accounts for all evidence and data, including that which appears to be contradictory.
Analogy	The conclusion is derived from comparing the issue at hand with another, similar issue.	Breathing in a toxic substance like asbestos is known to cause lung cancer. Cigarette smoke is also toxic, so it likely causes lung cancer.	Arguments from analogy are only strong when the two issues are similar with respect to the key features that are significant to the conclusion.

prem·ise

/ˈpreməs/

noun LOGIC

1. a previous statement or proposition from which another is inferred or follows as a conclusion.
"if the premise is true, then the conclusion must be true"

verb

1. base an argument, theory, or undertaking on.
"the reforms were premised on our findings"

What sort of sentences are present?

Is the reasoning sound?

Are you persuaded?



per·suade

/pər'swād/ 

verb

cause (someone) to do something through reasoning or argument.

"it wasn't easy, but I persuaded him to do the right thing"

synonyms: prevail on, [coax](#), [convince](#), [get](#), [induce](#), win over, bring around, [coerce](#), [influence](#), [sway](#), [inveigle](#), [entice](#), [tempt](#), [lure](#), [cajole](#), [wheelde](#); [More](#)

- cause (someone) to believe something, especially after a sustained effort; convince.
"they must often be **persuaded** of the potential severity of their drinking problems"

- (of a situation or event) provide a sound reason for (someone) to do something.
"the cost of the manor's restoration persuaded them to take in guests"

synonyms: [cause](#), [lead](#), [move](#), [dispose](#), [incline](#)

"a shortage of money persuaded them to abandon the scheme"



What is **PERSUASION**?

Persuasion is the act of **influencing someone** to believe or consider a certain point of view by using an argument or reasoning.

Persuasion Rules

Adapted from “Influence: The Psychology of Persuasion” by Robert B. Cialdini, 2007

Principle of Contrast

The smaller cost is more acceptable after it has been contrasted to a larger cost.

Reciprocation

A good action creates obligation. Concessions must be reciprocated.

Commitment and Consistency

Committing to something binds one to stay committed to it.

Social Proof

We tend to do what other people do.

Liking

Physical attractiveness. Similarity. Compliments.
Conditioning and association.

Authority

Connotation, not content: titles, clothes, trappings

Scarcity

Rarity, limitation of resources, not all goals can be pursued; trade-offs may be required

prop·o·si·tion

/ˌprəpəˈziʃ(ə)n/

noun

1. a statement or assertion that expresses a judgment or opinion.

"the proposition that all men are created equal"

synonyms: theory, hypothesis, thesis, argument, premise, principle, theorem, concept, idea, statement

"the analysis derives from one proposition"

Rhetoric. a statement of the subject of an argument or a discourse, or of the course of action or essential idea to be advocated.

Logic. a statement in which something is affirmed or denied, so that it can therefore be significantly characterized as either true or false.

Philosophy.

a) the content of a sentence that affirms or denies something and is capable of being true or false.

b) the meaning of such a sentence: *I am warm* always expresses the same proposition whoever the speaker is.

the·sis

/ˈTHēsis/ 

noun

1. a statement or theory that is put forward as a premise to be maintained or proved.
"his central thesis is that psychological life is not part of the material world"
synonyms: theory, contention, argument, line of argument, proposal, proposition, idea, claim, premise, assumption, hypothesis, postulation, supposition
"the central thesis of his lecture"

a proposition stated or put forward for consideration, especially one to be discussed and proved or to be maintained against objections:
He vigorously defended his thesis on the causes of war.

Argument vs. Thesis

Argument

- “An argument takes a stand on an issue.
- It seeks to persuade an audience of a point of view in much the same way that a lawyer argues a case in a court of law.
- It is **NOT** a description or a summary.”

Thesis

- “A thesis statement is a sentence in which you state an argument about a topic [...

AND]

- then describe, briefly, how you will prove your argument.”
- “A thesis makes a specific statement to the reader about what you will be trying to argue.”

Hegelian dialectic

noun

1. an interpretive method, originally used to relate specific entities or events to the absolute idea, in which some assertable proposition (thesis) is necessarily opposed by an equally assertable and apparently contradictory proposition (antithesis) the mutual contradiction being reconciled on a higher level of truth by a third proposition (synthesis).

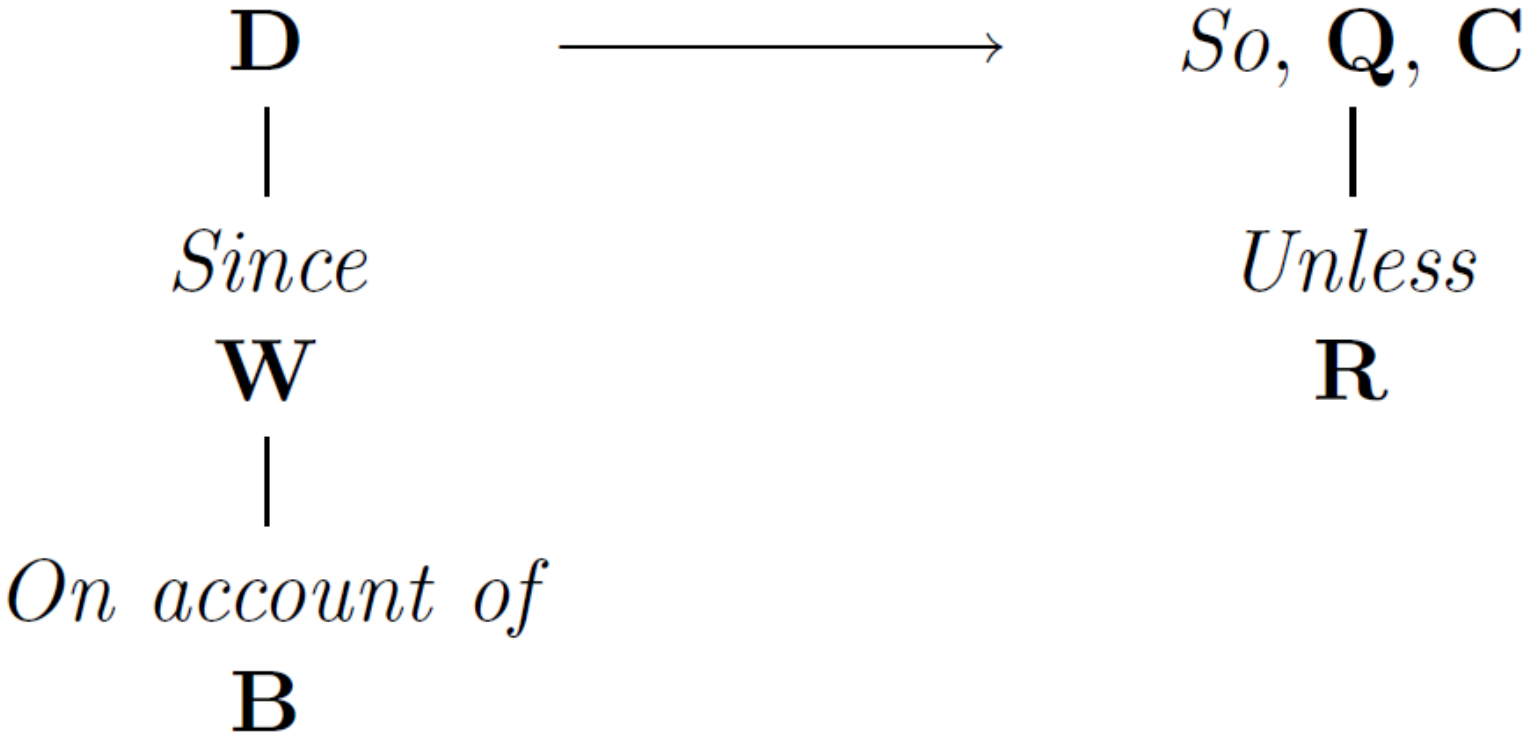
Forming arguments (*jurisprudential* basis)

- Toulmin's model of substantial argument defines the following 6 components:
 1. Claim, C: *“the counterpart of the logical, syllogistic conclusion, is an asserted thesis that someone tries to justify.”*
 2. Data, D: *“that are supposed to support the claim advanced; usually they are some sort of factual statements.”*
 3. Warrant, W: *“whose task is to show that the leap from data to “conclusion” is legitimate.”*

Forming arguments... continued

- Toulmin's model of substantial argument defines the following 6 components:
 4. Backing for Warrant, B: *“gives some additional support for a warrant and indicates the ultimate basis that makes the warrant legitimate.”*
 5. Modal Qualifier, Q: *“to express the strength of the step from the data to the conclusion and has an adverbial form such as “Probably”, “Almost certainly,” etc.”*
 6. Rebuttal, R: *“whose task is to point out the circumstances in which the leap from the grounds to the claim is not legitimate.”*

Example argument structure



p. 270

Data
Warrant
Backing for Warrant

Modal **Qualifier**, **Claim**
Rebuttal

Petersen is a Swede



so, almost certainly,
Petersen is not a Catholic

|
Since

|
Unless

|
A Swede can be taken almost
certainly not to be a Roman
Catholic

|
Petersen is a catholic priest

|
On account of

|
The proportion of Roman
Catholic Swedes is less than 2%

p. 270

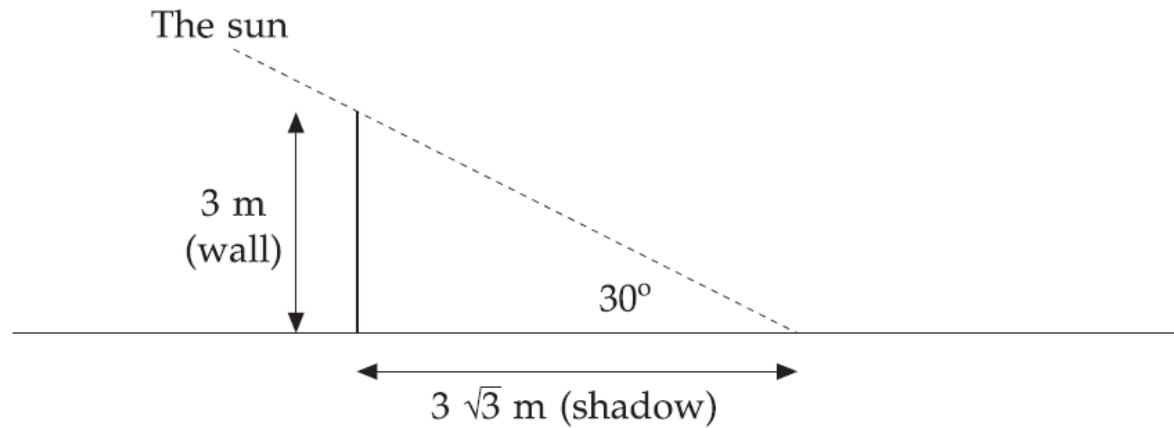
Data

Modal Qualifier, Claim

Warrant

Backing for Warrant

Rebuttal



(D) “The wall’s height = 3 m, —————→
the angle of elevation = 30°”

since

(W) Computational techniques
saying that “If D, then C”

on account of

(B) The Principle of Rectilinear
Propagation of Light

so (Q) almost certainly
(C) “The shadow’s depth = $3\sqrt{3}$ ”

unless

(R) Circumstances in which such
phenomena as diffraction,
refraction, scattering etc. occur

Avoid the following:

- **eristic**: reasoning that aims not at truth but at victory over an opponent or at making a weaker position prevail
- **equivocate**: to make a statement that is capable of being taken in more than one way, with the aim of exploiting the ambiguity
- **argumentum ad _____** classification of fallacies of reasoning involves many of them as involving an 'argument to _____' – there are many of them!
 - e.g., **[argumentum] ad traditionem** – *an argument which states “a premise must be true because people have always believed it or done it [(tradition), or that one] may conclude that the premise has worked in the past and will thus always work in the future.”*¹
- **post hoc ergo propter hoc**: (after this, so because of this) The fallacy of arguing that because one event happened after another, it happened because of it.



Practice!



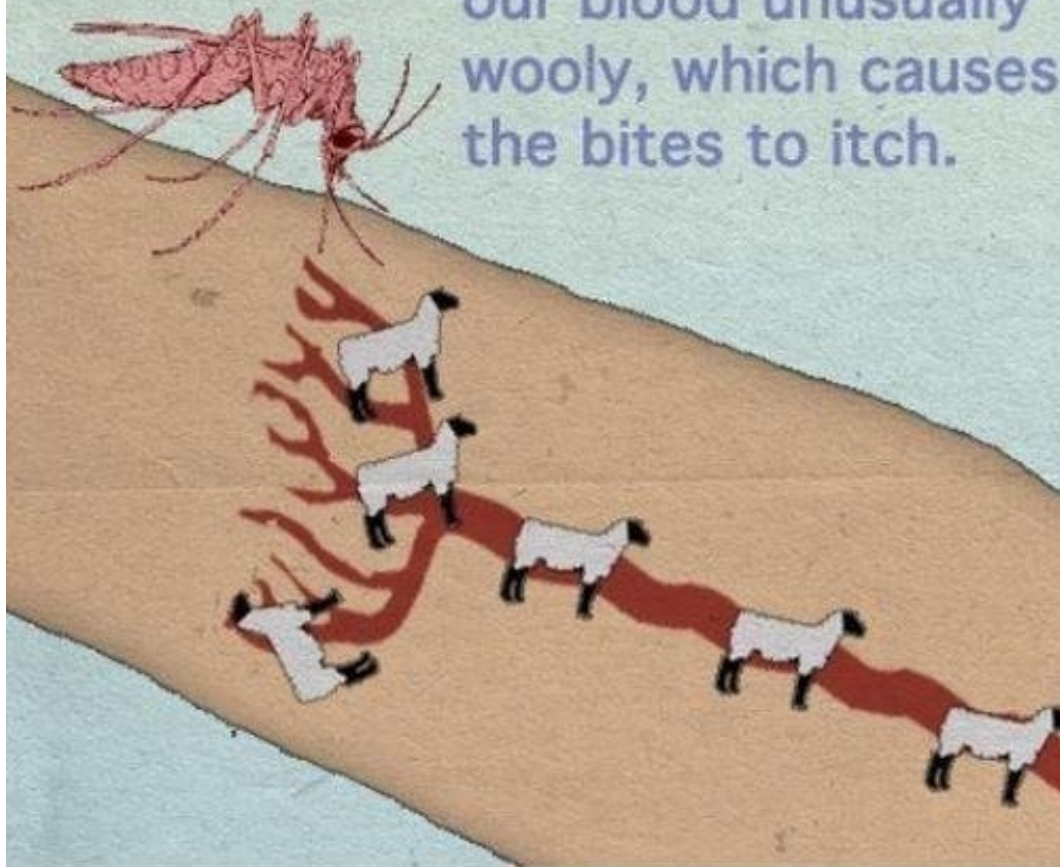


“Windshield broke. Cause unknown. Probably Voodoo.”

why do mosquito bites itch?

when a mosquito bites, it mixes in the blood of previous victims.

sheep dna makes our blood unusually woolly, which causes the bites to itch.



Resources

- U Toronto Writing Centre
 - <https://www.utsc.utoronto.ca/twc/writing-process>
 - Constructing a Logical Argument
 - Thesis Statement
- <https://clas.uiowa.edu/history/teaching-and-writing-center/guides/argumentation>
- http://writing.wisc.edu/Handbook/Thesis_or_Purpose.html
 - <http://writing.wisc.edu/Handbook/Thesis.html>
- <http://skepdic.com/ticriticalthinking.html>
- <http://skepdic.com/tilogic.html>
- https://web.cn.edu/kwheeler/fallacies_list.html

More fallacies worth knowing
about... and how to avoid them!

Alleged Certainty

(also known as: assuming the conclusion, appeal to common sense [form of])

Description: Asserting a conclusion without evidence or premises, through a statement that makes the conclusion appear certain when, in fact, it is not.

Logical Form:

Everybody knows that X is true.

Therefore, X is true.

Example #1:

People everywhere recognize the need to help the starving children of the world.

Explanation: Actually, people everywhere don't recognize this. This may seem like common sense to those who make the claim, and to many who hear the claim, but there are many people on

this earth who do not share that view, and need to be convinced first.

Example #2:

Everyone knows that, without our culture's religion, we all would be like lost sheep.

Explanation: Everyone does not know that. Sometimes, without stepping outside your own social or cultural sphere, it might seem like what you might accept as universal truths are simply truths within your own social or cultural sphere. Don't assume universal truths.

Exception: Facts that would seem foolish not to assume, can be assumed—but one should be prepared to support the assumption, no matter how certain one may be.

We all know that, without water, we cannot survive.

Tip: Replace the word “certain” in your life with “extremely probable.”

Variation: The *appeal to common sense* is asserting that your conclusion or facts are just “common sense,” yet sense

is anything but common. We have a tendency to think that many of our beliefs and opinions are “common sense” when, in fact, they are not. We must argue as to *why we believe something is common sense*, rather than just asserting that it is.

Affirming the Consequent

(also known as: converse error, fallacy of the consequent, asserting the consequent, affirmation of the consequent)

New Terminology:

Consequent: *the propositional component of a conditional proposition whose truth is conditional; or simply put, what comes after the “then” in an “if/then” statement.*

Antecedent: *the propositional component of a conditional proposition whose truth is the condition for the truth of the consequent; or simply put, what comes after the “if” in an “if/then” statement.*

Description: An error in formal logic where if the consequent is said to be true, the antecedent is said to be true, as

a result.

Logical Form:

If P then Q.

Q.

Therefore, P.

Example #1:

If taxes are lowered, I will have more money to spend.

I have more money to spend.

Therefore, taxes must have been lowered.

Explanation: I could have had more money to spend simply because I gave up crack-cocaine, prostitute solicitation, and baby-seal-clubbing expeditions.

Example #2:

If it's brown, flush it down.

I flushed it down.

Therefore, it was brown.

Explanation: No! I did not have to follow the, “if it’s yellow, let it mellow” rule—in fact if I did follow that rule I would probably still be single. The stated rule is simply, “if it’s brown” (the

antecedent), then (implied), “flush it down” (the *consequent*). From this, we cannot imply that we can ONLY flush it down if it is brown. That is a mistake—a logical fallacy.

Tip: If it’s yellow, flush it down too.

Ad Hoc Rescue

ad hoc

(also known as: *making stuff up**, *MSU fallacy**)

Description: Very often we desperately want to be right and hold on to certain beliefs, despite any evidence presented to the contrary. As a result, we begin to make up excuses as to why our belief could still be true, and is still true, despite the fact that we have no real evidence for what we are making up.

Logical Form:

Claim X is true because of evidence Y.

Evidence Y is demonstrated not to be acceptable evidence.

Therefore, it must be guess Z then, even though there is no evidence for guess Z.

Example #1:

Frieda: I just know that Raymond is just waiting to ask me out.

Edna: He has been seeing Rose for 3 months now.

Frieda: He is just seeing her to make me jealous.

Edna: They're engaged.

Frieda: Well, that's just his way of making sure I know about it.

Explanation: Besides being a bit deluded, poor Frieda refuses to accept the evidence that leads to a truth she is not ready to accept. As a result, she creates an *ad hoc* reason in an attempt to rescue her initial claim.

Example #2:

Mark: The President of the USA is the worst president ever because

unemployment has never been so bad before!

Sam: Actually, it was worse in 1982 and far worse in the 1930s. Besides, the President might only be partly responsible for the economy during his term.

Mark: Well... the President kicks animals when nobody is looking.

Explanation: Out of desperation, Mark makes a claim about the President's private treatment of animals after his original claim has been refuted.

Exception: Proposing possible solutions

is perfectly acceptable when an argument is suggesting only a possible solution—especially in a hypothetical situation. For example, “If there is no God, then life is meaningless.” If there is no God who dictates meaning to our lives, perhaps we are truly free to find our own meaning.

Tip: When you suspect people are just making stuff up, rather than providing evidence to support their claim, simply ask them, “What evidence do you have to support that?”

Affirmative Conclusion from a Negative Premise

(also known as: illicit negative, drawing a negative conclusion from affirmative premises, fallacy of negative premises)

This is our first fallacy in *formal logic* out of about a dozen presented in this book. Formal fallacies can be confusing and complex, and are not as common in everyday situations, so please don't feel lost when reading through the formal fallacies—do your best to understand them as I do my best to make them understandable.

New Terminology:

Syllogism: *an argument typically consisting of three parts: a major premise, a minor premise, and a conclusion.*

Categorical Term: *usually expressed grammatically as a noun or noun phrase, each categorical term designates a class of things.*

Categorical Proposition: *joins together exactly two categorical terms and asserts that some relationship holds between the classes they designate.*

Categorical Syllogism: *an argument consisting of exactly three categorical propositions: a major premise, a minor premise, and a conclusion, in which there appear a total of exactly three categorical terms, each of which is used exactly twice.*

Description: The conclusion of a standard form categorical syllogism is affirmative, but at least one of the premises is negative. Any valid forms of categorical syllogisms that assert a negative

premise must have a negative conclusion.

Logical Form:

Any form of categorical syllogism with an affirmative conclusion and at least one negative premise.

Example #1:

No people under the age of 66 are senior citizens.

No senior citizens are children.

Therefore, all people under the age of 66 are children.

Explanation: In this case, the conclusion is obviously counterfactual although both premises are true. Why?

Because this is a categorical syllogism where we have one or more negative premises (i.e., “no people...” and “no senior citizens...”), and we are attempting to draw a positive (affirmative) conclusion (i.e., “all people...”).

Example #2:

No donkeys are fish.

Some asses are donkeys.

Therefore, some asses are fish.

Explanation: This is a categorical syllogism where we have a single negative premise (i.e., “no donkeys”), and we are attempting to draw a positive (affirmative) conclusion (i.e., “some asses”).