

Critical Thinking Notes:

1. Introduction To Reasoning and critical thinking:

We reason whenever we solve problems, fix anything, think or work. **But**, we don't reason when we tell stories, take notes, daydream and experience feelings.

- Properties of Reasonable Beliefs:
 - **Truth:** Truthfulness makes a thought more reasonable.
{Ex. A politician is honest based on wishful thinking (not reasonable), vs. A politician is honest based on evidence from their record (reasonable because it sounds true)}
 - **Stability:** reasonable beliefs are known to be more stable, because they are less subject to being undermined by doubts and conflicts
 - **Safety:** the safer the belief is to a person, the more reasonable it is.
{Ex. You accept comments from a trustworthy engineer, unlike the comments of a normal engineer}
 - **Goodness:** if the belief is of more moral goodness (to humanity), it sounds more reasonable.
{Belief that other races are inferior → racism (not reasonable)}
 - **Health:** Reasonable beliefs are known to be psychologically healthier than the unreasonable ones, and the unreasonable beliefs are often the cause of psychological problems.
{Ex. If you've done bad things in the past, this makes you a bad person. (this is unhealthy belief resulting in a deliberately sense of guilt).
Also, if you believe that if you don't pull down top marks in a course this makes you an invaluable person. (panic attacks and depression)}.

- Inference and Mere thinking:

- When we **merely think**, thoughts come one after another.
- When we engage in **inference** thoughts, we think in such a way as to base some of our thoughts on another; hence, we try to link ideas. (reason)
{If we infer B from A we move from thought A to B because we believe that A makes B Reasonable}.
- Inference thoughts might contain **Inference Indicators**, such as {since, thus, implies, consequently, because, it follows that and given that}. But, it is not usually the case, for example if the inference is quite obvious.

Examples:

It's raining, and he took out his umbrella (mere thinking)

It's raining, **thus** he should take out the umbrella (inference thinking + indicator)

It's raining, he'd rather take out his umbrella (inference thinking no indicator)

- Recognizing Arguments:

Definitions:

- Statement:

A sentence used to express a thought that can either be true or false.
Hence a statement is a truth evaluable thought. {Questions and commands are not statements.}

- Types of Statements:

- i) A **premise**: a statement intended to do the supporting in an argument.

- ii) A **conclusion**: a statement intended to be supported in an argument.

{Examples: **All humans are mortal**. And, of course **Socrates is a human** so **Socrates is mortal**.}

- Arguments:

An argument is the expression in language of an inference. It consists of a set of statements, some which are intended to support another. Hence it is the act of expressing an inference in statements

- Types Of Arguments:

- i) Deductive Argument:

An Argument whose premises are intended to guarantee the truth of its conclusion. Such that **if the premises statements of the arguments are true then the conclusion must be true.**

{Example: **He doesn't love her**; after all **if he loved her, he would've trusted her**. But **he doesn't trust her**}

- ii) Inductive Argument:

An argument whose premises are to make likely, although it doesn't guarantee the truth of its conclusion. Such that **if the premises are true the conclusion might be true.**

{Example: **Every bear in the region *so far observed* has been aggressive**. So **every bear in the region is aggressive**.}

what makes this Argument inductive is the unnecessarily truth of so far observed cause we did not see all the bears but still it might be true.

- iii) Logically strong Argument:

An Argument whose premises **really do support the conclusion. Can be inductive or deductive and logically strong.**

- a. **Deductive + logically strong:**

An argument intended to be really such that if the premises are true the conclusion must be true.

- b. **Inductive + Logically strong:**

An argument intended to be really such that the premises are true thus its conclusion is **probably true**

Examples:

- i. "All Athenians are Greek. Xantippe is an Athenian. So Xantippe must be a Greek." { **Deductive + logically strong**}
- ii. "All Athenians are Greek. Xantippe is a Greek. So Xantippe must be an Athenian." { **Deductive but not logically strong**}
- iii. "I read an editorial by the Gulf newspaper last week, and it was bad. Don't bother reading their editorials they're not worth it." { **Inductive and not Logically strong**}
- iv. "I've read all the Gulf news' editorials in the past three years. They've all been bad. Don't bother reading their editorials they're not worth it." { **Inductive and Logically strong**}

- iv) Sound argument:
is an argument that is not only logically strong but also has all premises true.

Examples:

- i. If Stephen harper is Canada's head of state then Canada has a male head of state. Stephen harper is Canada's head of state. Therefore Canada has a male head of state. { **Deductive, logically strong, but unsound**}
- ii. If Elizabeth II is Canada's head of state then Canada has a female head of state. Elizabeth II is Canada's head of state. Therefore Canada has a female head of state. { **Deductive, logically strong and sound**}
- iii. Since everyman we've ever encountered is masculine and every woman is feminine, sex and gender always coincide. {**inductive, logically strong but unsound**}
- iv. Since some men we've encountered are feminine and some women are masculine, sex and gender come apart. {**inductive, logically strong and sound**}

- Mere Reports:
Something that simply describes a situation with a set of statements, it doesn't intend to support some statement on the basis of others. Usually story telling non argumentative as in mere reports we don't seek to convince something. {Example: I went to a class, felt nervous. But I learned a lot.}

- Explanations:
Not like an argument, an explanation doesn't seek to support a conclusion on the basis of premises, because it's not aimed at convincing others of the truth of a conclusion. It's rather aimed at making sense and provides an understanding of a statement whose truth is already assumed.
- Explanations seek to provide understanding of something.
{Example:
Why was Nicky at the party? I would assume she needed JP and JP was there (explanation).
Nicky was at the party. She had to be since JP was there, and he's never at the party without her. (argument)}

2. Clarification of Meaning: (Chapter 2 and 3 Textbook)

We use words and languages to express thoughts, the way we use the language to express our thoughts is called a meaning. And we always need to clarify meanings because:

- i) Being Clear helps you avoid being tricked into accepting unsound arguments.
- ii) Being Clear helps you avoid tricking others by unsound arguments.
- iii) Lacking clarity about meanings can lead to dope and deceive.

Examples:

Humans have a fundamental right to life. A woman's fetus is human. So a woman's fetus has a fundamental right to life.

Here the problem is in the meaning of human to the narrator. Human here is a biological material. But humans who have fundamental right to life are self-conscious creatures.

Everything contingent has a cause. The universe is contingent, thus the universe as a whole has a cause. God is the cause of the universe as a whole. Hence god exists.

Definitions:

These are important tools for avoiding dupery and deception, since they are the central means, whereby we attempt to clarify meanings of words.

Note:

Definiendum: is the word/phrase being defined.

Definiens: the clarifying/defining words.

Types of definition:

- **Reportive Definition:**

It's the attempt to clarify the meaning of a word as it is originally used.

{Example: A square is a 4 sided shape with 4 right angles}

- **Where do Reportive definitions fall short?**

The Reportive definitions can be good or bad depending on whether they successfully clarify the word or phrase.

There are three cases in which the Reportive definition might fall short.

i) With respect to scope:

The reportive definition **definiens** might be too broad or too narrow.

Examples:

- a. A bachelor is an unmarried male (too broad).
- b. Canadian provinces are Ontario, British Columbia and Alberta. (Too narrow with respect to scope *not all the provinces*)
- c. The term suicide is applied to all cases of death resulting directly or indirectly from a positive or a negative act of the victim side which he knows will produce his death. {too broad}

ii) With respect to circularity:

The definiens may involve the definiendum (itself or similar)

Examples:

- a. Human rights are rights had by a human.
- b. Restoration is the process or activity of restoring.

iii) With respect to obscurity:

The definiens may be no clearer than the definiendum.

Examples:

- a. A grampus is a kind of blowing, spouting blunt headed, dolphin like cetacean.

- **Stipulative Definition:**

An attempt to clarify the meaning of a word or phrase regardless the way it's used.

{Example: I'll call an argument happy. Just because it's logically strong.}

They can also fall short, however it's more difficult to assess whether a Stipulative definition fall short with respect to scope. Assessing this will involve paying close attention to how the individual defines the definiendum.

Definitions can be very helpful for avoiding or correcting common pitfalls when it comes to clarity of meanings, the common pitfalls are **Vagueness and Ambiguity**.

- **Vague:** a word or phrase that has an imprecise meaning.
- **Ambiguous:** a word or a phrase that has more than one precise meaning.

Examples:

- a. Sorry you don't have a diploma or an equivalent working experience. (Vague)
- b. You shouldn't be critical you are comfortable against the voice of voters.
(Ambiguous, can be previous or current years voters)
- c. Sadly, it seems that my partner and I are no longer in contact. It's obvious given how far apart we've been. (Ambiguous, apart as in distance/mentally?)

Lack of clarity can be also due to the confusion about the distinction between **analytic & synthetic statements**.

- **Analytic statements:** a statement that is true simply by virtue of its meaning.
Example:
 - a. Everything red is colored.
 - b. A bachelor is an unmarried adult male
 - c. If something is a circle, then it's a plain geometric figure with a series of points equidistant from central point.
 - d. Every event has a cause (true and analytical)
- **Synthetic statements:** a statement that may be true but not simply by virtue of its meaning.
Example:
 - a. Dave's Jacket is red. (in a certain time)
 - b. Cesar is a bachelor.
 - c. There's a circle on the blackboard in Dave's office. (not necessarily a perfect circle)

How confusion between the analytical and synthetic statements can lead to dupery and deceive?

All successful people are wealthy (premise 1). Dave isn't wealthy (premise 2).
Hence, Dave is not successful. (conclusion)

{**If premise 1 is meant to be analytic** (successful is defined **stipulatively** *clarified despite its meaning*) → the argument is **sound** but has an uninteresting conclusion}

But

{**If premise 1 is meant to be synthetic** (successful is defined **reportively** *clarified with precise meaning*) → the argument is **unsound** because premise 1 is false}

Conditional Statements:

It is a statement that asserts the truth of something. (One thing is true if the other is)

- They're usually of the form "If A then B".
- Example:
If today's Thursday then Dave is having beef stew for dinner.

The **A** statement is called the **Antecedent** is asserted as **sufficient** condition for the **B** statement. The **B** statement is called the **Consequent** asserted a **necessary** condition for the **A** statement.

- If you passed the course (sufficient) then you wrote the final exam (necessary).

Conditional statements can be **true/false**, depending whether the conditions they assert are correct.

True: If you are taking Phil2003, then Dave's your instructor.

False: If Dave's your instructor then you are a wealthy Canadian. 0.0

Different ways of expressing conditional statements:

if A then B = A only if B = A implies B = unless B not A = In order for A, B.

Bi-conditional statements:

These are statements that go both ways in the sense that their **antecedent and consequents** are known to be **both sufficient and necessary for each other's**.

They're of the form **"A if and only if (IFF) B"**

Categorical Claims:

Claims about all members (or some) of a category or a group are easily translated into conditional statements when the equivalence are kept in mind.

All X's are Y's = if something is an X then it is a Y.

No X's are Y's = If something is an X then it's not a Y.

Note: A definition is a bi-conditional Claim.

Examples: All humans are mortal/ No dog is a reptile/ No stoic is hedonist

In summary; our assessment of an argument can depend crucially on being clear about whether its premises include normal statements asserting necessary or sufficient conditions.

Example:

Having a C+ average is a condition for getting into a program. So don't worry, you'll get in, you've a C+ average.

All Athenians are Greek, Xantippe is a Greek. So Xantippe is an Athenian. (Not true but necessary)

3. Restructuring Arguments: (Chapter 4 in the Textbook)

In order to properly assess an argument you need to identify the structure of an argument. And in order to identify the structure of the argument you need to:

- i) Figure out the main components (premises and conclusions)
- ii) Identify the support relation(s) they bear to each other's.

Tips for identifying the main components of the argument:

- 1- Identify the main conclusion of the argument. Ask what's the central, ultimate statement the author is trying to convince you to believe?, look for inference indicators
- 2- Identify the premises (including intermediate conclusion) of the argument. Ask: what are the central claims the author is providing support of the main conclusion?
- 3- Label the main conclusion and premises if appropriate.
- 4- Rephrase arguments for clarity's sake if appropriate.