Chapter - 2

Basic concepts of logic

🚀 Hi people , እስኪ ዛሬ ደግሞ ሰውን ሰው ስላስባለው "ሎጂክ" ወይም ደግሞ "ስነ አመክንዮ" እንነጋገር።

ለመሆኑ ሰነ አመክንዮ (Logic) ምን ማለት ነው?

✍Logic(ስነ አመክንዮ) : is the science or philosophy that deals with and evaluates argument.

Logic ማለት ሰለ Argument የሚያጠና እና argumentን የሚገመግም የሳይንስ ወይም የፍልስፍና አይነት ነው።

ታዲያ Argument ምንድን ነው?🤷‍♀️

Argument is a statement that has premises and conclusion.

Argument(አመክንዮ) ማለት የሆነ ዓረፍተ ሀሳብ (statement) ሲሆን በውስጡ premise(ቅድመ ሁኔታ) እና conclusion(መደምደሚያ) የያዘ ነው።

A statement is a sentence that is either true or false (a declarative sentence).
ማለትም እውነት ወይም ሀሰት ሊባል የሚችል ገላጭ ዓረፍተ ነገር ነው።

ስለዚህ statement:
✅ጥያቄ(question) :where is khartum?🟫
✔Proposal: Let's go to a movie tonight.
✔Suggestion: i suggest you to get contact lenses
⭐Command(ትዕዛዝ): turn off the light right now!🟫
⭐Exclamation: fantastic! እነዚህ በሙሉ They Are not❌🤦‍♀️ statements.

Premise provide alleged evidence and support.

Premise(ቅድመ ሁኔታ) የArgument part ሲሆን በግልፅ የታወቀ ማስረጃ ወይም ድጋፍ የሚያቀርብልን ነው ።

ለመሆኑ ለማነው ድጋፍ ወይም ማስረጃ የሚቀርበው?🟫

Obviously ለ conclusion🤷‍♀️
➖Conclusion follows the alleged evidence and support.

🔲conclusion (መደምደሚያ) ማስረጃውን ተከትሎ የሚመጣ ድምዳሜ ነዉ።

⏭An argument contains atleast one premise and one and only one conclusion. (እንዳትረሱ)

✅Argument ቢያንስ አንድ premise (ከ አንድ በላይም መሆን ይችላል) ነገር ግን አንድ Argument አንድ እና አንድ እና አንድ☝ conclusion ብቻ ይይዛል። እንዳትረሱ ፈተና ላይ አይቀርም

How can we distinguish premises from conclusion?

Premise እና conclusion እንዴት እንለያለን?

1⃣look for indicator word
(ጠቋሚ ቃላት ካሉ ማየት)

Premise indicator words

Since(ከ...ጀምሮ)
Because(ምክንያቱም)
Owing to(ምክንያት)
Seeing that(ይህን በማየት)
Given that(በተሰጠን መሠረት)
✅As
✅For
✅In that
✅Maybe inferred from(ምናልባት ከ...ይገመታል)
✅In as much as
For the reason that(በዚህ ምክንያት/ ምክንያቱም)

👮‍♂Conclusion indicator words
(የመደምደሚያ ጠቋሚ ቃላት)

🔲Therefore(ስለሆነም)
🔲wherefore(ስለዚህ)
🔲Accordingly(በዚህ መሠረት)
🔲Provided that(በቀረበው መሠረት)
🔲It must be that(ስለዚህ መሆን ያለበት...)
🔲We may conclude(...ብለን መደምደም እንችላለን)
🔲Entails that(...የሚለውን ይጨምራል)
🔲Hence(ስለዚህ)
🔲It shows that(ይህ የሚያሳየን)
🔲Whence
🔲Consequently(በዚህም ምክንያት)
🔲We may infer (ብለን ልንገምት እንችላለን)
🔲It implies that(ይህ የሚነግረን)
🔲As a result(ውጤቱም)
🔲So(ስለዚህ)
🔲It follows that(ይህ የሚመለከተው)

ውዶቼ እነዚህ indicator words ፈተና ላይ በምርጫ መልክ ስለሚመጡ ከቻላችሁ ሁሉንም ያዟቸው።

➡እዚ ጋር "for this reason" እና "for the reason that" ግራ እንዳያጋባችሁ , 💁‍♀for this reason is a conclusion indicator word EXCEPT when followed by a colon (:) it indicates premise.

"For this reason" የመደምደሚያ ጠቋሚ ቃል ሲሆን premiseን የሚያመለክትበት exception አለ እሱም colon : ሲከተለው ብቻ ነው።

→For the reason that ግን የ premise ብቻ indicator word ነው።

Example:

Tortured prisoners will say anything just to relieve the pain. Consequently, torture is not a reliable method of interrogation.

→conclusion
"Torture is not a reliable method of interrogation,"

the statement that follows the conclusion indicator word is obviously the conclusion.

→Premise:Tortured prisoners will say anything to releive the pain.

Another example using premise indicator :

→Expectant mothers should never use recreational drugs, since the use of these drugs can jeopardize the development of the fetus.

premise => The use of these drugs can jeopardize the development of the fetus,"

✍ከpremise indicatorኡ በኋላ የሚመጣው premiseኡ ነው።

→Conclusion => By elimination method(premiseኡን ከለየን በኋላ የቀረውን በማጥፋት conclusion እናገኛለን)

"Expectant mothers should never use recreational drugs." ብለን conclude እናረጋለን።☺

እንወዳችኋለን

→ይሄ Chapter ካልገባችሁ ሙሉ Logic አይገባችሁም ፤ በደንብ አንብቡ ።

#part-two

Techniques of Recognizing Arguments

መቼም መጨቃጨቅ ሁሉ Argument ነው አትሉኝም ።

→In day to day life ሰዎች ይቀልዳሉ ፣ ያሸሟጥጣሉ ፣ ፍቅራቸውን ይገልፃሉ፣ ግጥም ይገጥማሉ ... ብዙ ብዙ ነገር ሲነጋገሩ ይውላሉ።

✍ነገር ግን በተማርነው logic መሠረት Argument የሆነውን እና ያልሆነውን መለየት አለብን አይደል?

📓 ስለዚህ ሁሉም ነገር Argument ካልሆነ ፤ ከ non argument እንዴት Argument የሆነውን መለየት እንደምንችል እናያለን ።

✨Recognizing Argumentative passage

በመጀመሪያ Argument የሆነው ምን አይነት ቅርፅ አለው?

Save store, [03/11/2025 17:51]
→A passage contains an argument if it purports to prove something.

ምንባቡ አንድ ነገር ለማረጋገጥ(to prove something)
ከፈለገ(purports) Argument(ክርክር) ይይዛል☺።

BUT what does it mean to purport or to prove something? 🧱

2 conditions must be fulfilled to purport or to prove something:

1️⃣At least one of the statements must claim to present evidence or reasons.(in other words must contain premise)

✍️ቢያንስ አረፍተ ሀሳቡ ማስረጃ ወይም ምክንያት ማቅረብ አለበት ፤በተዘዋዋሪ premise ሊኖረው ይገባል ማለት ነው ።

2️⃣There must be a claim that the alleged evidence or reasons support or implies something-that is, a claim that sonething follows from alleged evidence.

➡️ሁለተኛ ያ የቀረበው ማስረጃ(evidence) (premise) የሚደግፈው conclusion መኖር አለበት ።

በአጭሩ premise and conclusion ሊኖረው ይገባል።

➡️እዚ ጋር premiseኡ actual evidence or true reasons(አለም ላይ ያለ እውነተኛ ማስረጃ ሊያቀርብ ይችላል) OR Actually do support the conclusion(መደምደሚያውን ለመደገፍ ብቻ የቀረበ ሊሆን ይችላል / ውሸትም ቢሆን ማለት ነው ።)

➡️መጀመሪያ ላይ የገለፅነው Factual claim ይባላል። (እውነታው)

Factual claim: the existence and the reality of the argument.

ሁለተኛ ላይ የገለፅነው ደግሞ (ውሸትም ቢሆን ዋናው መደምደሚያውን መደገፉ ነው) ያልነው Inferential claim ይባላል ።

➡️Inferential claim: the linkage between the premise and conclusion.

✍️An inferential claim can be either explicit(ግልፅ) or implicit(የተደበቀ).🧱

An Explicit inferential claim is usually asserted by premise or conclusion indicator words(thus ,since, because, hence ,therefore...).

Explicit(ግልፅ) የሆነው inferential claim በቀጥታ የpremise or የconclusion ጠቋሚ ቃላት በማየት የምንለየው ሲሆን 🧱

Implicit inferential claim exists if there is an inferential relationship between the statements in a passage, but the passage contains no indicator words.

➡️ሌላው ደግሞ ከindicator words ውጪ በውስጥ ታዋቂነት(implicitly) premiseኡ conclusionኡን የሚደግፍ ከሆነ ማየት ነው

➡️ስለዚህ ይህን ካየን The techniques to identify an argument usually follows 3 🚶‍♂️ዩsteps.

look for indicator word(not guaranteed)

ጠቋሚ ቃላት ካሉ ማየት።

Detect the occurrence of inferential relationship.

Indicator word ከሌላቸው በpremiseኡ እና በconclusionኡ መሀከል ያለውን ግንኙነት ማየት ነው።

Know typical NON-ARGUMENTATIVE passages.

ብዛት የሚዘወተሩ "argument ያልሆኑ" የምንላቸውን ማወቅ።

🛩️ለመሆኑ Non-argumentative passages የምንላቸው እነማን ናቸው?🧱

What is not an Argument

Simple non inferential passages

→Warnings(ማስጠንቀቂያ)

eg: Watchout that you dont slip on the ice.

→ Peice of advice(ምክር)

Eg: After class hours, I would suggest that you give careful consideration to the subject matter you have discussed.

→Statements of belief or opinion(እምነት ወይም አስተያየት)

Eg: I believe that it is not dying that people are afraid of. Sonething else something more unsettling(ምን ይመስላቹሀል ግን? ለምን ሰው መሞት እንደሚፈራ?) and more tragic than dying frighten us...

→Expository passages(ገላጭ ምንባብ)

→Begins with a topic sentence followed by one or more sentences that develop the topic sentence.

✨ከሆነ መነሻ ሀሳብ ተነስቶ ነገሮችን የሚገልጽ ከሆነ ገላጭ (expository passage እንለዋለን)

→Cannot be an argument when, the objective is not to prove the topic sentence but only to expand it or elaborate it.

✨ከመነሻ ሀሳቡ በኋላ የሚመጣው መነሻ ሀሳቡን በሰፊው ለማብራራት ወይም ዝርዝር ሀሳብ ለመስጠት ከሆነ Argument አይሆንም🙅‍♀️።

→If the purpose of the subsequent sentence in the passage is not only to elaborate the topic but also to prove it then it is argumentative.

✨ቀጥሎ የሚመጡት sentenceኦች መነሻ ሀሳቡን ከማብራራት አልፎ prove(የሚያረጋግጡልን) ከሆነ Argument ነው እንላለን።

✍illustrations(ምሳሌዎች)

Are intended to provide examples of a claim, rather than prove or support tge claim.

🙍‍♀️illustrations(ምሳሌዎች) የምንላቸው አብዛኛውን ጊዜ "for example" , "for instance"...እያልን ምሳሌ እየሰጠን የምናብራራቸው ናቸው።

The trick is, እነዚህ የቀረቡት ምሳሌዎች prove ለማድረግ የቀረቡ ከሆነ Argument ይሆናሉ።

Eg: Many wild flowers are edible. For example, daisies and lilies are delicious in salads.

✍Explanations(ማብራሪያ)

An explanation tries to show why something is the case.

🙍‍♀️በአጭሩ "ለምን ይህ ሆነ?" የሚለውን ያብራራልናል።

Eg: I fell down because i tripped.

explanation has two parts.
(ሁለት ክፍሎች አሉት።)

✍Explanandum(ተብራሪው)

The statement that is explained.

Using the above example
"i fell down" is the explanandum.

Explanans(አብራሪው)

The statement that does the explaining.

Save store, [03/11/2025 17:51]
From the above example "i fell down" is the explanan.

"Why you fell down?" ብለን ስንጠይቅ መልስ የሚሰጠን ነው ።

→Conditional statements

📑 is an if - then statement.

Eg: if it rains , then the picninc will be cancelled.

→it has two parts.

Antecedent: the statement following tge word if.
(ከ if ቀጥሎ የሚመጣው ዐ.ነገር)

Eg: it rains.

✍Consequent

The statement following the word "then".

ከ then በኋላ የሚመጣው ዐ.ነገር።

Eg: ...the picnic will be cancelled.

Sufficient condition vs necessary condition

Sufficient condition

በቂ ቅድመ ሁኔታ

Eg: Being a dog is a sufficient condition for being an animal.

ውሻ መሆን በቂ ቅድመሁኔታ ነው እንስሳ ለመሆን።

→Necessary conditions

አስፈላጊ ግን ግዴታ ያልሆነ ቅድመ ሁኔታ።

Eg: being an animal is necessary condition for being a dog.

✍እንስሳ መሆን ግን ውሻ መሆኑን አያረጋግጥም ምክንያቱም ዓለም ላይ
ስንት ዐይነት እንስሰሳ አለ?ወፍ ቢሆንስ? ጅብ ቢሆንስ Why not አንበሳ

Please ተማሪዎች እነዚህን ነገሮች በደንብ በጥያቄ practice አርጉአቸው ።

WE CANNOT GET ANYWHERE WITHOUT PRACTICE.

☆Types of arguments: Deduction and Induction (የArgument ዓይነቶች)

"We think in logic, as we talk in prose, without aiming at doing so."
- John Henry Newman

ሰው በመሆናችን ብቻ logically እናስባለን ነገር ግን "ሁሉም ሰው እኮ logically አያስብም"🤦‍♀️ ልትሉኝ ትችላላችሁ ነገር ግን ልዩነቱ ሁሉም ሰው ሰው በመሆኑ ብቻ logically ያስባል ግን ልዩነቱ logicኡን የሚያቀርብበት መንገድ ነው ።

1⃣Deductive Argument

➡️An argument which is impossible to have true premises followed by false conclusion.

በDeductive Argument ጊዜ የቀረበው evidence(premise) በእርግጠኝነት መደምደሚያ እንድንሰጥ(deduct እንድናደርግ) የሚያስችል ሲሆን ፤ የ Deductive Argument እሳቤው ምን መሰላችሁ True Premises ይዘን False Conclusion በምንም ተዓምር ልናገኝ አንችልም ነው።

ስለዚህ እንደ Deductive Argument እሳቤ በጭራሽ❌(it is impossible) premiseኡ እውነት ሆኖ የውሸት(የተሳሳተ) መደምደሚያ ልንሰጥ አንችልም።

Eg:
➡️ All humans are mortal.
➡️ Socrates is human.
✨Therefore, socrates is mortal.

➡️አያችሁ ? ሁሉም ሰው ሟች ከሆነ እና Socrates ሰው ከሆነ እሱ ማን ስለሆነ ሞት ይቀርለታል ? ስለዚህ Our Conclusion ሙሉ በሙሉ Follows from our Premises ። So, it is deductive Argument. ገባችሁ

➡️Main point to consider :-

Induction ማለት
➡️ (from particular to general),
Deduction ማለት
➡️(from general to particular)
የሚለውን በፊት በተለምዶ የምናቃቸውን definition drop እናረገዋለን፤ በርግጥ አልፎ አልፎ እንደዛ የሚሆንበት case አለ ነገር ግን ሁሌ አይደለም ስለዚህ ይሄን Definitionአቸውን ብቻ በመያዝ እንዳትሸወዱ ።

2⃣Inductive Argument

➡️An argument which is improbable to have true premises followed by false conclusion.

Premiseኦቹ መጠነኛ የሆነ evidence አቅርበው , conclusionኡ በእርግጠኝነት ሳይሆን በ"መሰለኝ" የምንደመድም ከሆነ inductive argument እንለዋለን።

አስተውላችኋል ? Deductive Argument ከሆነ It is impossible ነበር ያልንው Which Means በጭራሽ ሊሆን አይችልም ብለን ነበር አሁን ደግም(in case of inductive Argument)it is improbable አልን Degree of certaintyውን ዝቅ አደረግንው።

Eg:
➡️if the president lives in the white house, then he lives in washington DC.
➡️The president does live in the white house.
➡️So, the president lives in Washington DC.

መግቢያ ላይ ካወራነው ጋር ስናያይዘው፤ Deductive argument የሚጠቀም ሰው ማለትም በእርግጠኝነት "ይህ ከሆነ...ይሄ ይሆናል።" ብሎ የሚናገር ሰው logicአዊ አስተሳሰቡን ይጠቀማል ማለት ነው

➡️በተቃራኒው ደግሞ "ይሄ ከሆነማ...ይሄ ሊሆን ይችላል።" ብሎ የሚጠራጠር ሰው ደግሞ Inductive argument የሚጠቀም ሰው ነው ማለት ነው ።

Differentiating deductive and inductive arguments

🔜ስለዚህ አሁን Definitionአቸውን ካወቅን እንዴት እንለያቸው ወደሚለው እንግባ ።

የሚከተሉትን ዘዴዎች ተጠቅመን መለየት እንችላለን

1⃣The occurrence of indicator words

(ጠቋሚ ቃላት ካሉ ማየት። እነማን ናቸው?)

✍ Deductive Argument የሚያመላክቱ ጠቋሚ ቃላት
✅Necessarily (የግድ)
✅Absolutely (በፍፁም)
✅Definitely (በእርግጠኝነት)
✅Certainly....

Inductive Argument የሚያመላክቱ ጠቋሚ ቃላት:

Probable (ሊሆን ይችላል)
Improbable (ላይሆን ይችላል)
Plausible (አሳማኝ)
Implausible (የማያሳምን)
Likely (ሞሆኑ አይቀርም)
Unlikely (የማይመስል ነገር)

2⃣The Actual Strength of the inferential link between the premises and the Conclusion

🔠(በ premiseኡ እና በ condusionኡ መካከል ያለው የመደጋገፍ መጠን ይወስነዋል , በ"መሰለኝ" ነው ወይንስ በ"እርግጠኝነት" የሚለውን ማየት ነው።)....inferential Claim 👨‍🦱♂

Example 1:

➡Alan is a father.
➡Therefore , Alan is a male
[obviously deductive , because እርግጠኛ ነን Alan አባት ከሆነ በእርግጠኝነት Alan ወንድ ነው ማለት ነው ።)

Example 2 ፡

➡The majority of Ethiopian people are poor.
➡Alamudin is an Ethiopian 🇪🇹
Therefore, Alamudin is poor.

Save store, [03/11/2025 17:51]
ገባችሁ ? The majority " የሚለው ቃል እርግጠኝነቱን ያሳንሰዋል ስለዚህ inductive argument ነው እንላለን ፤ ሁሉም ኢትዮጵያዊ ደሀ ነው ብለን ካልጀመርን በስተቀር በምንም ሁኔታ Alamudin ድሃ መሆኑን እርግጠኛ ሆነን መናገር አንችልም ። ... ድሃ ነው እንዴ ?

3⃣Character or form of Argumentation

🔠ሌላው ለመለየት የምንጠቀምበት ዘዴ የ አፃፃፍ ቅርፁን እና አይነቱን በማየት ነው ።

➡Deductive argument forms
(የ Deductive Argument ቅርፆች)

A. Argument based on Mathematics
(mathematical facts)

ALL arguments in Pure mathematics are deductive BUT Statistics is inductive. (እንዳትረሱ🔠)

የሒሳብ ስሌቶች deductive ናቸው ::

ለምሳሌ ፡

በለጡ 5 ብርቱካን አላት።
ወንደሰን 2ቱን ብስቱካን ወሰደባት ።
ስለዚህ በለጡ አሁን 3 ብርቱካን አላት።

(እርግጠኛ የሆነ calculation ስለሆነ deductive ይሆናል ማለት ነው

B. Argument based on definition

Eg ፡ Kebede is a Physician.
Therefore, Kebede is a doctor

→Physician ማለት by definition doctor ማለት ነው , እንደዚ አይነት Anument ኦች deductive እንላቸዋለን

C. Sylogisms

→Consists of EXACTLY 2 premises and 1 conclusion.
(ሁልጊዜ 2 premise ኦች እና 1 ብቻ Conclusion አላቸው።)

→የተለመዱ 3 አይነት syllogisms አሉ።

Categorical Syllogism

✓ALL , some , No ... ብለው የሚጀምሩ ናቸው።

Hypothetical Syllogism

✓if ..... then
✓If A -> B አይነት ቅርፅ ያላቸው ናቸው ።

Example:
→ If I study hard , I'll pass the test
→ If I pass the test , I'll get ice cream.
→Therefore, if I study hard , I'll get ice cream

እዚህ ጋር If ብለው ከተነሱ እንዴት Deductive ይሆናሉ ብላችሁ አትጠይቁም ?...see the video

Disjunctive Syllogism

Either ..... or

ለምሳሌ :
→Kirubel is either Universty of gondar or Jima University student .

→Kirubel is not jima University student
→Therefore Kirubel is UOG Student

መጀመሪያ ሁለት Choice ይሰጣችኋል Then አንዱን አይደለም ይላችኋል So, የቀረበው Conclusion ነው ማለት ነው

Inductive argumentative forms
(የInductive Argument ቅርፆች)

→Predictions(ትንበያ)
→Analogy(ማመሳሰል)
→Inductive Generalization
→Arguments from authority

→Argument based on signs(ምልክት)
→Causal
Inferences(ምክንያት->ውጤት)

እንዳይሰለቻችሁ ቶሎ ጠቅ ጠቅ አርገን እንለፋት ።

በቃ Inductive Argumentን ዝም ብሎ በ"መሰለኝ" የሚመራ ሰዉ አርጋችሁ አስቡት ፤ In day to day Life እርግጠኛ ያልሆነ ሰው።

Predictions (ትንበያ)

In this type argument the premises deal with some known event in the present or past, and the conclusion moves beyond this event to some event in the relative future.

የወደፊቱን መገመት እንጂ በእርግጠኝነት ማወቅ አንችልም አይደል? የሆነ superpower ያለው ሰው ካልሆነ በቀር , In reality Future ላይ የሚፈጠረውን በእርግጠኝነት ማወቅ አንችልም ስለዚህ predictions are Inductive .

Example

→ It rained for three days straight last week, so it will probably rain this week too."

Note: Predictions are always inductive because they’re not certain. You might get rain, but who knows – maybe it’ll be sunny! 🌞

Analogy (ማመሳሰል)

This argument occurs when there is an analogy or similarity between two things or states of affairs. And, the conclusion is based on this analogy.

Eg :
→ሀና ቀይ ፣ ረጅም እና ጎበዝ ናት ፤ እና ደግሞ ጠዋት ጠዋት ትሮጣለች🏃‍♀→።
→Lily ቀይ፣ ረጅም እና ጎበዝ ናት።
→Therefore , Lily ጠዋት ጠዋት ትሮጣለች ማለት ነው።

Note: Not necessarily! 🏙 Analogies can be fun, but Lily might just sleep in.

አስባችሁታል ሁለት ነገሮች የተወሰነ ነገር ተመሳሳይነት ስላላቸው ብቻ by Everything ይመሳሰላሉ ቢባል Is that ?

Inductive generalization
(ማጠቃለል)

→This is an argument that proceeds from the knowledge of a selected sample to some claim about the whole group. Since the members of the sample have a certain attributes or characteristic(s), it is argued that all the members of the group have that same characteristic(s).

👶ፆከአንድ ነገር ተነስቶ ሁሉንም ማጠቃለል ።

Eg :
→ከ 6 ወር በፊት ታምሜ ሀኪም ቤት ስሄድ መርፌ የወጋችኝ ነርስ🤶ፆ ቆንጂዬ ነበረች።
ከዛ ደግሞ በነጋታው መድሀኒት ልገዛ Pharmacy ስሄድ መድሀኒቱን የሸጠችልኝ Pharmacist ቆንጂዬ ነበረች።
🏙ሲመስለኝ ሁሉም የጤና ባለሙያዎች ቆንጂዬ ናቸው ። ሊሆን ይችላል ?

Argument From Authority

⏭This is an argument in which the conclusion rests upon a statement made by some presumed authority or witness.

አንድ ስልጣን ያለው ሰዉ (Proffessor, teacher prime minister) በአጠቃላይ ተደማጭነት ያለው ሰው ወይም የአይን እማኝ

(eyewitness) ፤ ያ ሰዉ ከተናገረው ነገር ተነስተን Conclude ስናደርግ Argument From authority ይባላል ።

→ያ ሰዉ እኮ ሊሳሳት ወይንም ለዋሽ ይችላል ፤ እርግጠኛ አይደለንም ስለዚህ እርግጠኛ ካልሆንን ደግሞ Inductive ነው ማለት ነው ።

Save store, [03/11/2025 17:51]
Example ፡
→Whatever the Bible teaches is true .
→The Bible teaches us, that We Should Love Our neighbours .
Therefore, We Should love our neighbours.

አስታውሱ : Experts are reliable but not always correct, so this is still inductive. Keep questioning

✍ለዛሬ ይበቃናል ፤ በጣም ወሳኝ Part ስለሆነ በደንብ አንብቡ , ቀጣዩን Part አይተን ጥያቄ እንሰራለን ፤ በርቱ ☺ እንወዳችኋለን

☆Argument based on Sign

This is an argument that proceeds from the knowledge of a certain sign (symbol, symptom) to knowledge of the thing or situation that the sign stands for.

→ይህ Argument ምልክቶችን አይተን Conclusion የምንሰጥበት ነው። To be honest የምልክቶችን ብቻ አይተን እርግጠኛ የሆነ መደምደሚያ መስጠት አንችልም ምክንያቱም እነዛ ምልክቶች በስህተት ወይንም ያለ ቦታቸው ተቀምጠው ሊሆን ቢችልስ ?

Example ፡
→ A “No Parking” sign on the street.
→ Conclusion: I shouldn’t park here!

→ "No parking " የሚል ምልክት መንገድ ዳር ላይ አይተን ይህ ቦታ park ለማድረግ አልትፈቀደም ብለን በእርግጠኝነት መደምደም አንችልም ።
(ምልክቱ በስህተት ያለቦታው ተቀምጦ ቢሆንስ?)

Note: Signs can be wrong You’re basing your actions on a probability, not a guarantee.

→Argument on Causal Inference:

In Cause and effect relationship, We Can't be 100% sure that One thing Causes, Or doesnot cause , something else , for that reason Causal Arguments are best treated as Inductive.

👮ሪበምክንያት እና ዉጤት(Causal inference) የተያያዘ Argument ,አንድ ምክንያት አንድን ውጤት Cause ለማድረጉ ወይንም Cause ላለማድረጉ 100% እርግጠኛ መሆን አንችልም በዚህ ምክንያት Causal Arguments ከ Inductive ስር ይመደባሉ

Example :
→ I stayed up all night, and then I had a terrible headache the next day.
→ Conclusion: Staying up caused the headache.

Note: Probably! But other factors could be involved too, so it’s still inductive

እስካሁን ያወራናቸውን ነገሮች በአግባቡ ተረድታችሁ ከያዛችሁ Deductive እና Inductive Argumentኦችን በቀላሉ መለየት ትችላላችሁ

Evaluating Arguments

እስኪ አሁን ደግሞ ወደ ገደለው እንግባ ፤ Argument ኦችን እንገምግማቸው☺

Evaluating Deductive Arguments :

Validity – Does the structure of the argument make sense?

Truth (T/F) – Are the premises actually true in the real world?

→Soundness (Does it all add up—structure and truth?)

Validity vs. Invalidity in Deductive Arguments

→በ deductive Argument ጊዜ valid/ Invalid እና sound / Unsound ነው የምንለዉ።

Valid deductive argument is an argument in which it is IMPOSSIBLE for all the premises to be true and the conclusion false.

Invalid Argument is an argument which the premises are assumed to be true and it is possible for the conclusion to be false.

Premiseኡ እውነት እንደሆነ አስበን Conclusion ኡ false ከመጣብን Invalid እንለዋለን።

👰Valid Deductive Argument የምንለው ደግሞ Premiseኡ እውነት ሆኖ በጭራሽ conclusionኡ ሀሰት መሆን የማይችል ከሆነ Valid እንለዋለን ይሄ ማለት ,The conclusion follows with strict necessity from the premises ማለት ነው

ምሳሌ፡
If alpha then Beta
(Assumed to be ,True)
→Alpha(Assumed to be T)
→Therefore , Beta. (according to the premises It becomes T)

ገባችሁ ? Just ልነግራችሁ የፈለኩት incase of Valid Argument ,Premise True ሆኖ Conclusionም Strictly Premiseውን Follow ማድረግ አለበት ለማለት ነው ። So the above argument is VALID

NB :-
1. Validity ≠ Truth Value (Factual Claim)
2. In validity test, all Premises are assumed True.

🔲Assumed to be true ያልንበት ምክንያት ፤ validityን Check በምናደርግበት ጊዜ factual claimኡ (እውነታው) matter አያደርግም
ስለዚህ ለ Validity actual fact አያስፈልግም ማለት ነው ። ገባችሁ?

ስለዚህ the first Steps in determining validity are:-

1. Assuming the premises to be true.

→እዚህ ጋር ልብ በሉ ,በእውኑ አለም እውነት ሊሆኑም ላይሆኑም ይችላሉ ነገር ግን እኛ በመጀመሪያ Stepአችን premiseኦቹ እውነት እንደሆኑ Assume እናደርጋለን🔲

2. ቀጣይ ስራችን የሚሆነው Check Is it Possible for the Conclusion to be false? False መሆን የሚችል ከሆነ INVALID ይሆናል But if the Conclusion ends Up True👰 then it is VALID.

#Key

🚀ቀላል መንገዶች validity ለማረጋገጥ እስኪ የ mathematics እውቀታችሁን አስታውሱ ።

🚀 VALID የሆኑ(common valid arguments)

1. Disjunctive Syllogism
A V B
Not A
Therefore, B

Example:
→ I'll either eat pizza or burger tonight.
→ I'm not eating pizza .
→ Therefore, I'm eating burger

Why it's valid: If one option is out, the other must be true! Easy peasy

2. Modus Ponens (The "If…Then" Rule)
A->B
A
Therefore, B

Save store, [03/11/2025 17:51]
Example:
If it rains , the plants will get watered
→ It's raining
→ Therefore, the plants are getting watered!

Why it's valid: It's like a domino effect: if A happens, B must follow.

3. Modus Tollens (The "Not Gonna Happen" Rule)
A->B
Not B
Therefore, not A

Example:
→ If it's snowing , it's cold outside .
→ It's NOT cold outside .
→ Therefore, it's NOT snowing!

Why it's valid: No cold means no snow. If B isn't happening, neither is A

4. Hypothetical Syllogism (Connecting Dots)
A->B
B->C
Therefore, A->C.

Example:
→ If I study hard , I'll pass the test.
→ If I pass the test , I'll get ice cream.
→ Therefore, if I study hard, I'll get ice cream

Why it's valid: Each part connects like a chain. If A triggers B and B triggers C, then A must trigger C.

5. Categorical Syllogism (Playing with "All" Statements)

✔ All A are B
X is an A
Therefore, X is B

Example:
All dogs are loyal .
Max is a dog .
→ Therefore, Max is loyal .

All A are B.
All B are C.

→Therefore, All A are C.

This one is similar with the hypothetical syllogism but with the "All")

Example:
→ All students are learners
All learners have potential
→ Therefore, all students have potential

✅Why it's valid: Statements about "all" let us make conclusions about specifics. It's like stacking building blocks.

⚠ Common Invalid Arguments

A or B
🆙 A
→Therefore, B

Example:
👮♂ I'll either wear a hat or sunglasses .
👮♂ I'm wearing a hat .
→ Conclusion: Therefore, I'm also wearing sunglasses .

Why it's invalid: Just because you chose one doesn't mean you did both!

All A are B.
All B are C.
→Therefore, All C are A.

Example:
All birds can fly .
🆙 All things that can fly are cool .
→ Conclusion: Therefore, all cool things are birds❌

Why it's invalid: This doesn't go both ways! Cool things aren't always birds.

🗒In short , ☝in the above valid Argument ላይ ከጠቀስናቸው የተለየ ቅርፅ ካላቸው Invalid እንላቸዋለን።

🏃♂ Let's Practice Together🆙

Example :
If you're reading this, you are alive.
you are reading this.

→Therefore, you're alive.

Is it VALID or INVALID?

First, let's assign a letter for each.

Let A be :" you're reading this"
Let B be: "you're alive."

"If...then" is an implication so we express it with an arrow.

✌Combining together

If you're reading this(A)
=> you're alive(B)
→Therefore, you're alive(B)

A->B
A
→Therefore,B.

By Modes Pollens it is VALID

At the end of the day , እንደዚ በቀላሉ validityን ማረጋገጥ እንችላለን

☆Evaluating Inductive Argument : Strength, Truth, and Cogency

ወገኖቼ ደከማችሁ? inductive Arguments ወደ መገምገም አብረን እንዝለቅ!

✍Remember :- በ Deductive Argument ጊዜ valid/invalid እንዳልነው በ Inductive ጊዜ ደግሞ Strong/weak እንላለን💁‍♀️፤ በDeductive ጊዜ sound /Unsound እንዳልነው በInductive ጊዜ ደግሞ Cogent/ Ungogent እንላለን

Strong inductive argument

→Is an argument such that if the premises are assumed true, it is improbable for the conclusion to be false.

ሁሉም Premiseኦቹ እዉነት ናቸዉ ብለን አስበን Conclusionኡ ሀሰት የሚሆንበት Probablityዉ ዝቅተኛ ከሆነ Strong እንለዋለን።

"Improbable" የምትለዋን Word ያዙልኝ☺

Example :
→Most college students own MP3 players.
→Andy is a college student.
→So, Andy probably owns an MP3 player.

🔠አብዛኛው የኮሌጅ ተማሪ Mp3 (ሙዚቃ ማጫወቻ) ካለው እና Andy የኮሌጅ ተማሪ ከሆነ , Andy Mp3 ካላቸው ተማሪዎች ውስጥ የመሆን እድሏ ከፍተኛ ነው 🤷‍♀️። ይህ Argument ምን አይነት የመስላችኋል? Strong አይደል? ምክንያቱም premisesኡ እና conclutsionኡ በበቂ ሁኔታ ተደጋግፈዋል።

Plus ,Most(አብዛኛው) የሚለው ቃል Probabilityውን ስለሚጨምረው Strong ይሆናል ማለት ነው ።

💁‍♀️To sum up, in strong argument the conclusion Follows probably from the premises.

ሌላ ምሳሌ ልጨምርላችሁ:-

አብዛኛው ኢትዮጵያዊ እንጀራን ይወዳል።
ትግስት ኢትዮጵያዊ ነች።
→ስለዚህ ትግስት ምናልባት እንጀራን ትወድ ይሆናል።

✓A strong argument gives strong support to the conclusion, while a weak one lacks support.

Imagine, trying to lift a heavy weight: if your premises are strong, they give you the power to lift the conclusion to a likely truth

Save store, [03/11/2025 17:51]
በተቃራኒው ደግሞ Weak inductive Argument Premiseኡ እውነት ቢሆንም፣ መደምደሚያው አሁንም ውሸት ሊሆን ይችላል። ምን ልላችሁ ፈልጌ መሰላችሁ Premises fail to support strongly the conclusion

ለምሳሌ:-
ይህ ካፌ ጣፋጭ ቡና ያቀርባል.
ሶስት ሰዎች በቡና ሲዝናኑ አየሁ።
ስለዚህ, ሁሉም ሰው የዚህን Cafe ቡና ይወደዋል ።

Weak inductive argument is an argument such that if the premises are assumed true, it is probable for the conclusions to be false.

Weak የምንለው ደግሞ ሁሉም Premiseኦቹን እውነት ናቸዉ ብለን አስበን conclusionኡ ሀሰት የመሆን ዕድሉ ከፍተኛ ከሆነ Weak ይሆናል።

Example :
This barrel contains one hundred apples.
Four apples selected at random were found tasty.
→Therefore, probably all one hundred apples are tasty.

አስባችሁታል ? ዘንቢል ዉስጥ 100 Apples አሉ።4ቱን randomly አውጥተን ስንቀምሳቸው በጣም ጣፋጭ ነበሩ።ስለዚህ most probably ሁሉም 100 Apples ጣፋጭ ናቸው ቢባል እንዴዴ አያስብልም ?

→You see how weak the argument is? ከዛ ሁሉ apples 4ቱን ብቻ ቀምሰን ስለ ሁሉም እርግጠኛ መሆን እንችላለን እንዴ?

የቀመስነው apples ብዙ ቢሆን ኖሮ Strong Argument ይሆን ነበር ።4ቱ appleኦች ብቻ መቶውንም determine ሊያረጉ አይችልም ስለዚህ Weak Inductive Argument ነው እንላለን።

The strength or weakness of an inductive argument results not from the actual truth or falsity of the premises and conclusion, but from the probabilistic support the premises give to the conclusion.

ቀደም ሲል በ Deductive argument ጊዜ እንዳልነው validity/ invalidity determine ስናደርግ factual claimኡን consider አናደርግም ብለን ነበር አይደል? , the same thing applies here, strength of inductive argument , Weak Or Strong የምንለው የpremiseኡን እና የconclusionኡን Factual claim consider ሳናደርግ ነው

✓We only Care about the inferential claim.

Note that : Like validity, Strength doesn't require truth value.

We have said earlier that there are four possibilities with respect to the truth or falsity of the premises and conclusion of a given argument:

1. True premises and True conclusion,
2. True premises and False conclusion,
3. False premises and True conclusion, and
4. False premises and False conclusion. These possibilities work in inductive arguments as well

Previously, በdeductive argument ጊዜ 4 possibilityኦች አሉ ብለን ነበር።
1. Tp and Tc
2. Tp and Fc
3. Fp and Tc
4. Fp and FC

Except the second case, ሁሉም either weak or strong ሊሆኑ ይችላሉ, But in the second Case it is weak.

Cogent and uncogent Inductive Arguments

→A cogent argument is an inductive argument that is strong and has all true premises.

✨ Cogent Argument = A strong argument + All true premises

Example:

There were South African leaders imprisoned before they became president.
Nelson Mandela was a South African leader.
→Thus, before his leadership career in South Africa, Mandela was imprisoned.

→This is a Cogent argument, meaning it's a strong inductive argument with all true premises

Uncogent argument is
an inductive argument that is either strong with one or more false premises, or weak, or both.

→Uncogent Argument =

1. Strong + Factually false premise Or
2. Weak + factually false premise, Or,
3. Weak + Factually true premise

Example:

✨ Most lemons are sweet.(false premise)
✨ This is a lemon
→ Therefore, this lemon is probably sweet.

❌ Here, we've got a false premise (lemons aren't sweet!), so even if the logic seems strong, the argument becomes uncogent because it's based on a false assumption.

🍋ለመሆኑ የሎሚ ጣዕም ምንድነው ? Bitter or Sour ? or Sweet ?

→To have a cogent argument, you need both a strong argument and true premises. Missing one of these is like እንጀራውን ካለ ወጥ እንደመብላት ነው። Or ደግሞ ወጡን ብቻውን እንደመጠጣት ነው

No one wants an uncogent meal— ugh, argument!

የDeductive ከያዛችሁ Inductive ቀላል ነው , it goes parallel with deductive.

Now , Quick Recap:

Strong Inductive Argument

→Premises give good reason to believe the conclusion.

Weak Inductive Argument

→ Premises don't give enough support to make the conclusion likely.

Cogent Argument ✨

→ Strong + All True Premises.

Uncogent Argument

→ Weak and/or has one or more false premises.

⌨Chapter 2 በዚ መልኩ ጨርሰናል፤ በጣም ደስ የሚል እንዲሁም ወሳኝ Chapter ነው

Next chapter -3 ቀላል በሆነ Content እንገናኛለን