Chapter Three: Informal fallacies

A fallacy is a defect in an argument.
It can be committed in many ways.

- an error in reasoning.

But, they usually involve either a mistake in reasoning or the creation of some illusion that makes a bad argument appear good (or both).

If both deductive and inductive arguments contain fallacies, they are either unsound or uncogent. If an argument is unsound or uncogent, it has one or more false premises or it contains a fallacy (or both).

- **Fallacies are usually of two types: formal and informal.**

- A formal fallacy is one that may be identified through mere inspection of the form or structure of an argument.

- It is a mistake with respect to the form; or which resulted from breaking some rule of validity.

- Fallacies of this kind are usually found only in deductive arguments that have clearly recognized forms: categorical, disjunctive and hypothetical syllogisms.
- a deductive argument is invalid and fallacious formally usually because the premises fail to support the conclusion with **strict necessity** or when the premises of an argument are true and followed by a false conclusion.

- Examples of formal fallacy,

1) All tigers are animals.

All mammals are animals.

Therefore, all tigers are mammals.

The above argument has this form:

All A are B

All C are B

Therefore, All A are C

The correct form is this one:

All A are B

<u>All B are C</u>

All A are C

2) If nepotism is wrong, then it is destructive.
It is destructive.
Hence, nepotism is wrong.

- The form of this argument is:
  If A, then B
  B
  Therefore, A (Fallacy of affirming the consequent)

3) If it is raining, then the ground is wet.
It is not raining.
So, the ground is not wet.

- It has this form:
  If A, then B
- Not A
- So, not B (Fallacy of denying the antecedent)

- **Informal fallacies** are those that can be detected only through the analysis of the content of the argument.

→ are errors which arise from carelessness with respect to the relevance of ideas or with respect to the clarity and consistency of language.

→ require an examination of the argument's content not the form.

Ex. (1)

All factories are plants.

All plants are things that contain chlorophyll.

Therefore, all factories are things that contain chlorophyll.

- When we analyze the content of this argument it will have the following form;

All "A" are "B"

All "C" are "D"

Therefore, All "A" are "D".

- In this argument we represent the same word, i.e. plants, by two different letters.

- This is because contextual meaning of the word “plants” in the first premise is quite different from the contextual meaning it has in the second premise.

- In the first premise it represents a building where something is manufactured; whereas in the second premise it represents a life form.

Ex. (2)

- My wife's brother is a real pig. You should see him eat! And if he is a pig, then he is not a human.

So, he is not human.

Pig:- a person who habitually over eats.

-Pig:- (a kind of animal)

- Though there are very many informal fallacies, there is no absolute consensus on how can they be classified. However, through considering some communality among them, informal fallacies can be divided in to five groups: *Fallacies of relevance, fallacies of weak induction, fallacies of presumption, fallacies of ambiguity and fallacies of grammatical analogy.*

1. Fallacies of Relevance (Fallacies involving irrelevant evidence)

- Fallacies of relevance- premises that are logically irrelevant to the conclusion.
- Yet the premises are relevant psychologically, so the conclusion may seem to follow from the premises though it doesn't follow logically.
- In such arguments the connection between the premise and conclusion is emotional.

A. Appeal to force (Argumentum ad Baculum: Appeal to “stick”)

- -This fallacy occurs whenever an arguer poses a conclusion to another person and tells either implicitly or explicitly some harm will come to him or her if he or she doesn’t accept the conclusion.

- -It always involves a threat by the arguer on the physical or psychological well being of the reader or listener. Obviously such a threat is logically irrelevant to the subject matter of the conclusion.

- Ex1. **National to Alien**
- Addis Ababa is the most attractive city in the world. If you don't accept this and failed to write in your news paper, I am going to tell the police and you will be arrested.
- **Ex2. Child to play mate**
- " Mr.x is the best show on TV and if you do not believe it, I am going to call my big brother over here and he is going to beat you up."
- **Ex3. Secretary to Boss**
- **"**I deserve a raise in salary for the coming year. After all, you know how friendly I am with your wife, and I am sure you would not want her to find out what has been going on between you and that sex pot client of yours."

B. Appeal to pity (Argumentum ad misericordiam)

- -It occurs whenever an arguer poses a conclusion and then attempts to evoke pity from the reader or listener in an effort to get him or her to accept the conclusion. (sympathy)

- **E.g.** A student to his teacher;

  Sir! At the end of this semester, you must give me “A”. If you don’t do this my girl friend will hates me and the respect that I have from my friends will be ruined.

- Tax payer to judge:
- Ex.2. Your honor I admit that I declined to implement a government policy of value added tax due to the fact that if I implement it, I may loose additional money which would enable me to open a new business for my elder son. If you take any measure against this, I will probably lose my job, my poor wife won’t be able to have the operation that she desperately needs, and may kids will starve. Surely, I am not guilty.

C. Appeal to the people (Argumentum ad populum)

- - It uses such desires as to be loved, esteemed, admired, valued, recognized and accepted to get the reader or listener to accept a conclusion.

- -It occurs when an arguer attempts to persuade a person or group of persons by appealing to be accepted or valued by others. Two approaches are involved here: direct and indirect.

- **The <u>direct approach</u> occurs when an arguer, addressing a large group of people, elicits the emotions and enthusiasm of the crowd to win acceptance for his conclusion. The objective is to arouse mob mentality.**
- **-The direct approach is not limited to oral argumentation but also similar effect can be accomplished in writing.**

- -In the indirect approach the arguer directs his/her appeal not to the crowd as a whole but to one or more individuals separately, focusing up on some aspects of their relationship to the crowd.
- The indirect approach has three forms.

1. the bandwagon argument,
2. the appeal to vanity, and
3. appeal to snobbery.

All are standard techniques of the advertising industry.

- ex. of **bandwagon argument**
- Of course you want to buy Colgate toothpaste. Why, 90 percent of American people brushes with Colgate.
- The idea here is you will be left behind or left out of the group if you do not use the product.

- The appeal to **vanity** often associates the product with a certain celebrity who is admired and pursued, the idea being that you, too, will be admired and pursued if you use it.
- Example;

Do you want to have modern shoes? Then, you should have to choose Ambessa Shoe Factory. This is because our products are the first choice of the famous athlete Haile G/selassie.

- Example of appeal to **snobbery**.

- Coca cola is not for everyone. It is consumed only by those who have the ability to distinguish high quality products from others.

- Here the point is if you qualify as one of the selected few, you should prefer the product.

D. Argument against Person (Argumentum ad Hominiem)

- This fallacy always involves two arguers. One of them advances either directly or indirectly a certain argument, the other then responds by directing his or her attention not on the first person's argument, but to the first person himself.

- When this occurs the second person is said to commit an argument against the person. It has three forms:

  1. ad hominiem abusive,

  2. ad hominiem circumstantial and

  3. tu quoque ("you too" fallacy).

- **In *ad hominiem abusive* the second person responds to the first person's argument by verbally abusing the first person.**

- **E.g. Sigmund Freud's psychoanalysis theory is nonsensical and unacceptable. Freud, you know, was a stupid bigot Jewish.**

- Unlike to ad hominiem abusive, ad *hominiem circumstantial* rather than verbally abusing the opponent, the arguer tries to find certain circumstances that affect his/her opponent.
- E.g. George Bush argued against the inhuman attack of Israel on the innocent Palestinians. He said, “the Israelites are defending themselves”. This is because he is the president of America who is the close friend of Israel. Therefore, his argument lacks trustworthiness.

- In the *tu quoque (you too)* fallacy the arguer usually cite features in the life or behavior of the first arguer that conflicts with the latter's conclusion. The nature of this fallacy looks like this:
- "How do you argue that I should stop doing "X"; why you do or have done X yourself"
- E.g. My teacher told me that cheating on exam is a bad habit. But he himself used to cheat on the exam when he was at university. Therefore, his argument against cheating on exam is foolish.

E. Accident

- **The fallacy of accident is committed when general rule is applied to the specific case it was not intended to cover. The general rule is cited in the premise and the wrongly applied to the specific case mentioned in the conclusion.**

- **E.g. whoever pierces a person's body with a knife should be brought to court. But surgeons often do this when operating. Therefore, surgeons should be brought to court.**

F. Straw man Fallacy

It is committed when an arguer distorts an opponent's argument for the purpose of more easily attacking it, demolishes the distorted argument, and then concludes that the opponent's real argument has been demolished.

Always involves two arguers.

Exaggeration of the first person's argument by the second arguer is common.

E.g. So many people these days are against prayer in public schools. Of course, the assumption underlying this view includes, there is no God only matter exists and life is essentially meaningless.

That is why we must fight against these who seek to remove prayer from our public school.

G. Missing the point (Ignoratio Elenchi)

It occurs when the premises of an argument support one particular conclusion, but then a different conclusion, often vaguely related to the correct conclusion, is drawn.

Ignoratio Elenchi means “ignorance of the proof”. The arguer is ignorant of the logical implication of his/her premises, and draws a conclusion that misses the point.

E.g. Crimes of theft and robbery have been increasing at alarming rate lately. Therefore, we must restate the death penalty immediately.

H. The Red herring Fallacy

It is committed when an arguer diverts the attention of the reader/listener by changing the subject to some totally different issue.

Ex.1. The position open in the accounting department should be given to Abebe. Abebe has six hungry children to feed, and his wife desperately needs an operation to save her eye sight.

II. Fallacies of Weak Induction

- They occur when the connection between premises and conclusion is not strong enough to support the conclusion
- Or when there is no enough evidence in an argument for us to believe the conclusion.
- However, the fallacies of weak induction often involve emotional grounds for believing the conclusion.

A. Appeal to Unqualified Authority (Argumentum ad Verecundiam)

- **It occurs when the cited authority or witness is not trustworthy.**

Possible Reasons :

i. lack of the required expertise.

ii. Biased ness or prejudice.

E.g. Ato Tekele, the deaf person who lives in Mekelle, stated that hearing the voice of birds at the early morning gives a delight full pleasure. From this we can conclude that it is pleasurable to hear the voice of birds at every morning

B. Appeal to Ignorance (Argumentum ad Ignoratiam)

- When the premises of an argument state that nothing has been proved one way or another about some thing and the conclusion then makes a definite assertion about that thing

- The issue usually involves some thing that has not yet been proved.

- E.g. Many scientists tried for decades to find cure for HIV/AIDS, but no one succeeded. From this, we can conclude that, no one will succeed in finding cure for this virus.

C. Hasty Generalization (Converse Accident)

- It is a fallacy that affects inductive generalization.
- The sample is not representative of the group.
- E.g. Both Haile G/Sillasie and Kennenisa Bekele are world Athletics record holders. From this we can conclude that all Ethiopian athletes are world athletics record holders.

D. False Cause

- It occurs whenever the link between the premise and conclusion depends on some imagined causal connection that probably doesn’t exist.

- “X” causes “Y”, where as “X” probably doesn’t cause “Y” at all.

- E.g. The moon was full on Thursday evening. On Friday morning I over slept. Therefore the full moon caused me to oversleep.

- **This fallacy has three forms;**

i. *post hoc ergo propter hoc*,(after this, therefore on account of this)

the first event causes the second event.

E.g. A black cat crossed my path and latter I tripped and sprained my ankle.

It must be that black cats really are bad luck.

ii. *non causa pro causa* (not cause for the cause)

The cause of some thing is not really the cause at all

E.g. There are more laws on the books than ever before and more crimes are being committed than before. Therefore, to reduce crime we must eliminate the laws.

***iii. over simplified cause*.**

Ex. The quality of education in our high schools has been declining for years.

Clearly, our teachers just are not doing their job these days.

E. Slippery slope

- Occurs when the conclusion of an argument rests upon an alleged chain of reaction and there is not sufficient reason to think that the chain of reaction will actually takes place.

E.g. Immediate actions must be taken against the mass production of weapons. If not, every individual will arm a weapon and rise against each other. This will lead to a frequent action of killing each other in the society. This in turn will result in the extinction of human race from the universe.

F. Weak Analogy

- Is committed when the analogy is not strong enough to support the conclusion.

- E.g. If a car breaks down on the freeway a passing mechanic is not obligated to render emergency road service. For similar reason if a person suffers a heart attack on the street, a passing physician is not obligated to render emergency medical assistance.

III. Fallacies of Presumption, Ambiguity, and Grammatical Analogy

- **Fallacies of Presumption**

  the premises presume what they purport to prove. The truth is uncertain or implausible.
- **Fallacies of Ambiguity** some form ambiguity in either the premise or the conclusion (or both).
- **Fallacies of Grammatical Analogy** grammatically analogous to other arguments that are good in every respect (linguistic similarity).

- **Fallacies of Presumption**

  a. **Begging the Question (Petitio Principi)**

- **It occurs when an arguer uses some form of phraseology that tends to conceal the questionably true character of a key premise.**
- **If the reader/listener is deceived into thinking that the key premise is true, he/she will accept the argument as sound, when in fact it may not be.**

- **It is called circular reasoning (saying two things in slightly different ways).**
- **E.g.1. Smoking cigarettes can harm one's health.**

  So, it is best to avoid smoking assuming one wants to be healthy.

  2. Capital punishment is justified for the crimes and kidnapping because it is quite legitimate and appropriate that someone be put to death for having committed such hateful and inhuman acts

b. Complex question

- It occurs when a single question that is really two (or more) questions is asked and a single answer is then applied to both questions.
- E.g.1. Have you stopped cheating on exam?
- 2. where did you hide the cookies you stole?
- The above single question consists in it self the following two questions;
- 1. Did you cheat on exam in the past?
- 2. If you did cheat in the past, have you stopped now?
- It involves an implicit argument, usually intended to trap the respondent in to acknowledging something that he/she might otherwise not want to acknowledge.
- A leading question is one in which the answer is in some way suggested in the question.

c. False Dichotomy (false bifurcation or the “either…. or …” fallacy)

- It is committed when one premise of an argument is an “either… or …” (disjunctive) statement that presents two alternatives as if they were jointly exhaustive (as if no third alternative were possible). One of the alternatives is usually preferred by the arguer.

- E.g. Either you buy only American made product or you don’t deserve to be called a loyal American. Yesterday you bought a new Toyota (i.e. Japanese product). Therefore, it is clear that you don’t deserve to be called a loyal American.

D. Suppressed Evidence

- Committed when the arguer ignores some important piece of evidence that outweighs the presented evidence and entails a very different conclusion.

- E.g. Most dogs are friendly and pose no threat to people who pet them. Therefore, it would be safe to pet the little dog that is approaching to us now.
  - **The arguer ignores that dogs also be a means for disease**

E. Equivocation

- It occurs when the conclusion of an argument depends on the fact that one or more words are used, either explicitly or implicitly in to two different senses in the argument.

- E.g.1) Any law can be replaced by the legislative authority. So, the law of gravity can be replaced by the legislative authority.

- **Law -**in the first premise it describes social law.

  -in the second premise it describes natural law.

F. Amphiboly

- It occurs when the arguer misinterprets a statement that is ambiguous and proceeds to draw conclusion based on this faulty interpretation.
- The original statement is usually asserted by someone other than the arguer.
- and structural defect is usually a mistake in grammar or punctuation-missing comma, a dangling modifier, an ambiguous antecedent of a pronoun, or some other careless arrangement of words.
- E.g. 1.John told Henry that he had made a mistake. It follows that John has at least the courage to admit his own mistakes.
  - Who made mistake, John or Henry?

Amphiboly differs from equivocation in two important ways.

First, equivocation is always traced to an ambiguity in the meaning of one or more words, whereas amphiboly involves a structural defect in a statement.

Second, 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.

Occasionally, however, the two fallacies occur together.

G. Composition

- The fallacy of composition is committed when the conclusion of an argument depends on the erroneous transference of an attribute from the parts of something onto the whole.

- It occurs when it is argued that because the parts have a certain attribute, it follows that the whole has that attribute too and the situation is such that the attribute in question cannot be legitimately transferred from parts to whole.

- E.g.1. Each atom in this piece of chalk is invisible. Therefore, the chalk is invisible.

- 2. Sodium And chlorine, the atomic components of salt, are both deadly poisons. Therefore, salt is a deadly poison.

- Note every such transference is illegitimate. Consider the following example

- E.g. Every atom in this piece of chalk has mass. Therefore, the piece of chalk has mass. (No fallacy is committed).

composition and division are classified as fallacies of grammatical analogy.

- **Composition** is sometimes confused with hasty generalization. To avoid the confusion, examine the conclusion of the argument. If the conclusion is a general statement, a statement in which an attribute is predicated distributively to each and every member of a class, the fallacy committed is hasty generalization. But if the conclusion is a class statement, in which an attribute is predicated collectively to a class as a whole.

Division

- The fallacy of division is the exact reverse of composition. As composition goes from parts to whole, division goes from whole to parts. The fallacy is committed when the conclusion of an argument depends on the erroneous transference of an attribute from a whole (a class) to its parts (or members).

- E.g.1. Salt is a nonpoisonous compound. Therefore, its component elements sodium and chlorine are nonpoisonous.

  2. The Royal Society is over 300 years old. Professor Thomson is a member of the Royal Society. Therefore, Professor Thomson is over 300 years old.
- This kind of transference is not always illegitimate.

- The following argument contain no fallacy:

  E.g. This piece of chalk has mass. Therefore, the atoms that compose this piece of chalk have mass. (No fallacy is committed).

- Division is sometimes confused with accident. Division proceeds from the class to the members, while accident proceeds from the general to the specific. Thus, to avoid such a mistake, examine the premises. If the premises contain a general statement, the fallacy committed is accident; if they contain a class statement, the fallacy is division.
- E.g. Stanley Steamers have almost disappeared. This car is a Stanley steamer. Therefore, this car has almost disappeared. (The fallacy committed is division).