

Chapter three: Informal Fallacies

What is fallacy?

- ❑ Is a defect in an argument.

Is a mistake in reasoning or the creation of some **illusion** that makes a bad argument appear good (or both). In other words, it is a defect in reasoning or is a defect in language used by the speaker or writer.

- ❑ More often occurs in unsound or uncogent kinds of arguments.

Fallacies are usually of two types:

1. formal fallacy is one that may be identified through mere **inspection of the form or structure of an argument**. Or It is a mistake with respect to the form; or which resulted from breaking some rule of validity.

Formal fallacies are usually found only in deductive arguments that have clearly recognized forms (i.e. categorical, disjunctive and hypothetical syllogisms).

Example: 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

Note: this argument is invalid and unsound, and the error can be identified through a mere inspection of the form of reasoning.

Example: 2) If nepotism is wrong, then it is destructive.

It is destructive.

Hence, nepotism is wrong.

Note: this argument commits a fallacy of affirming the

2. Informal fallacies

- ❑ are fallacies 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.
- ❑ In identifying the error, examination of the argument's content is required.

Example. 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 "F" are "P"

All "P" are "C"

Therefore, All "F" are "C".

Hence on the basis of its form, this argument is valid; yet, is invalid kind of argument because the word 'Plant' has two meanings which the argument doesn't reconsider this.

Example. 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.

Note: this is a fallacies argument because the speaker mistakenly use the word 'pig'.

“**Pig**” a person who habitually over eats.

“Pig” a kind of animal

Types of informal fallacies

1. Fallacy of relevance
2. Fallacy of weak induction
3. Fallacy of presumption
4. Fallacy of ambiguity
5. Fallacy of grammatical analogy

Fallacies of Relevance

- ❑ **is a fallacy involving irrelevant evidence, in other words**, premises are logically irrelevant to the conclusion; yet, the premises are relevant psychologically.
- ❑ Because premises are psychologically relevant, conclusion may seem to follow from the premises.
- ❑ In such arguments the connection between the premise and conclusion is emotional.

Fallacies categorized under this are:

1. Appeal to force
2. Appeal to pity
3. Appeal to the people
4. Against a person fallacy
5. Accident
6. Straw man
7. Missing the point
8. Red Herring

1. 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.

Ex 1:

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.

Ex 2. Child to his or her 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.”

1. 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.

The fact that an argument mentions a threat does not necessarily make it a fallacy

Example: the “force” used in the following argument is relevant to the conclusion. So it doesn’t commit a fallacy.

If you do not remove your missiles from Cuba, we will have no choice but to remove by force. If we use force to remove missiles, that may provoke an all-out nuclear war. Neither of us want nuclear

2. Appeal to pity (**Argumentum ad misericordiam**)

□ occurs whenever an arguer poses a conclusion and then attempts to evoke pity from the reader or listener in an effort to get his or her conclusion accepted. Or

□ The arguer evokes sympathy for his conclusion to be accepted. Example:

1. 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 hate me and the respect that I have from my friends will be ruined.

2. The position in the department of

however, there are situations where compassion or sympathy could be a legitimate response for some situations.

Most society values helping people in time of danger; showing compassion and sympathy is a natural response in some situation. If some group of people are in danger, helping out may require appeal to the compassion or pity of other people. Consider the following argument.

20 children survive earthquakes that kill most people in the village. These children lost their parents. They are out of school, and home in the street. Unless we each of us contribute money their life will be in danger in the coming days. We should help

■ Note that the following “pity” is also relevant to the conclusion

1. **Mother to daughter:** Nana was asking about you the other day. She is so lonely and depressed since her grandpa passed way, and her Alzheimer’s getting worse everyday. She has done so much for you over the years. Don’t you think you should pay her a visit.
2. National coach to players: boys this state championship is the biggest game of your lives. This is why you have been working for all year. Your parents are counting on you, your country is counting on you, and your community is counting on you. Make

3. 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 the crowd or the mass.

Consider the following argument.

- ❑ I look out at you all, and I tell you, I am proud to be here. Proud to belong to a party that stands for what is good for the country. Proud to cast my lot with the kind of people who make this nation great. Proud to stand with men and women who can get our nation back on its feet. Yes, there are those who criticize us, who label our view of trade agreements as “protectionist.” But when I look at you hard-working people, I know we’re right and¹¹

The speaker wants the audience to accept his conclusion that 'the trade agreement is not a protectionist'.

As you can see, the arguer uses the feeling of individuals to be part of the group to accept his conclusion. And anyone who wants to be part of the group, who does not want to be deviated from the mob mentality, accepts the conclusion as true.

Two approaches can be identified:

The direct approach

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.

Common in oral argumentation and writing.

Common in political speeches.

2. Indirect approach

- o 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.
- o Common in advertising industry.
- o Can be categorized into three forms
 1. Bandwagon
 2. Snobbery
 3. Vanity

1. Bandwagon

it has the pattern like this:

Everybody (or a selected group of people) believes, uses or does 'X'.

Therefore, you should believe, use or do 'X' to be popular, accepted or admired.

Examples:

1. All the really cool students of DBU smoke cigarettes. So you should too.
2. The majority of people in Ethiopia accept the opinion that child circumcision is the right thing to do. Thus, you also should accept that child circumcision is the right thing to do.

Note that all arguments that appeals to people are not fallacious

e.g. All villagers I have talked say that the water is safe to drink. So, probably the water is safe to drink.

2. Appeal to Vanity

- o is committed when a product or idea is associated with certain celebrity who is admired and pursued.
- o the idea being that you, too, will be admired and pursued if you use or accept or do it.
- o Form:

Example: . BBC may show the famous footballer, Frank Lampard, wearing Addidas shoe, and says: Wear this new fashion shoe! A shoe, which is worn only by few respected celebrities! ADIDDAS SHOE!!!

The message is that if you wear the shoe, then you, too, will be admired and respected, just like the famous footballer, Frank Lampard.

3. appeal to snobbery

Snob means a person who admires people in higher classes too much and has no respect for people in the lower classes

- Is committed when a particular product or idea is associated with a selected few.

Form:

‘X’ is used, done, accepted by some selected group

Therefore, you too to be among the few.

Example:

The newly produced Gebeta Guder wine is not for everyone. It is consumed only by those who have the ability to distinguish high quality products from others.

4. Argument against Person (Argumentum ad Hominem)

❑ This fallacy always involves two arguers.

Arguer 1: advances either directly or indirectly

Arguer 2: responds by directing his or her attention not on the first person’s argument, but to the first person himself or circumstances. As such, it is committed by the second arguer when

A. *ad hominem abusive*

- ❑ the second person responds to the first person's argument by verbally abusing the first person.

form:

X is a bad person

Therefore, X's argument must be bad.

Example

1. In defending animal rights, Mr. Abebe argues that the government should legislate a minimum legal requirement to any individuals or groups who want to farm animals. He argues that this is the first step in avoiding unnecessary pain on animals and protecting them from abuse. But we should not accept his argument because he is a divorced drunk person who is unable to protect even his own family.

B. **ad hominem circumstantial**

- rather than verbally abusing the opponent, the arguer tries to find certain circumstances that affect his/her opponent.

Form:

X is biased or has a questionable motive

Therefore, X's argument of claim should be rejected.

Examples:

1. Haileselassie I of Ethiopia argued in the League of Nations that member states should give hand to Ethiopia to expel the fascist Italy from the country. But the member states should not listen to the king. Haileselassie I argue in this way because he wants to resume his power once the Italians are expelled from Ethiopia.

This argument is fallacious because the arguer does not pay serious attention to the substance of the argument of the king. He just tried to discredit the idea of the king₈ by associating it with the circumstance with the Italian

C. *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 second arguer poses his argument by making the second arguer hypocritical of himself or herself.
- ❑ 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 in the other day”.

Form:

X fail to follow his or her own advice.

Therefore, X's claim or argument should be rejected.

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

5. Accident

❑ is committed when general rule is applied to the specific case it did not intend to cover.

See the following examples:

1. 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.
2. Freedom of speech is a constitutionally guaranteed right. Therefore, John Q. Radical should not be arrested for his speech that incited the riot last week.

In this 2nd example, the general rule is that freedom of speech is normally guaranteed, and the specific case is the speech made by John Q. Radical. Because the speech incited a riot, the rule does not apply.

6. Straw man Fallacy

- ❑ It is committed when an arguer **distorts an opponent's argument** for the purpose of more easily attacking.
- ❑ The following are the main features of straw man fallacy.
- ❑ First there are two individuals or groups discussing about some controversial issues; the two has opposite views. One of the arguers presents his views about the issues and the other is a critic
- ❑ Second the critic however does not rationally criticize the main or the substantive argument of the opponent. Rather he criticizes ideas which are the misrepresentation of the main content of the argument. He does so for easy attacking the argument.
- ❑ Third the critic concludes, by criticizing the misrepresented ideas that he knock down the main ideas. Since the critic does not attack the main ideas,¹ rather he criticized the misrepresented argument

Mr. Belay believes that ethnic federalism has just destroyed the country and thus it should be replaced by geographical federalism. But we should not accept his proposal. He just wants to take the country back to the previous regime. Geographical federalism was the kind of state structure during Derg and monarchical regime. We do not want to go back to the past. Thus, we should reject Mr. Belay's proposal

This argument involves two persons: Mr. Belay and his critic. Mr. Belay argues for geographical federalism and his critic opposing the view. This critics show that the critic do not refute or oppose the idea of geographical federalism. Rather he first misrepresented geographical federalism as going back to the past and then he criticizes the past regime and by doing so he believed the real argument knocked down. But he did not criticize the substance of the argument; he criticizes distorted idea which do not represent his opponent. This is an example of how straw man fallacy is committed.

When the fallacy of straw man occurs readers should keep in mind two things. First, they have to try to identify the original argument, which is misrepresented by the critic. Second, they should look for what gone wrong in the misrepresentation of the argument. Is the critic exaggerated the original argument or is he introduced a new assumption which is not presumed by the original argument.

7. 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.
- ❑ The arguer is ignorant of the logical implication of his/her premises, and draws a conclusion that misses the point.

❑ Examples

1. Crimes of theft and robbery have been increasing at alarming rate lately. Therefore, we must restate the death penalty immediately.
2. The world is globalizing more than ever. The world economy is becoming more and more interconnected. Multinational companies and supra national institutions are taking power from local companies and national governments. The livelihood of people is randomly affected by action and decision made on the other side of the planet and this process

the premises and the conclusion in this argument are unrelated. The correct conclusion would be to redirect globalization in a way that is beneficial for both the poor and the rich, not to detach countries from the process

8. The Red Herring Fallacy

- ❑ It is committed when an arguer diverts the attention of the reader or listener by changing the subject to some totally different issue.
- ❑ Irrelevant material is used to divert people away from the point being made, and refute the original argument.

Examples:

Hana argues that wushwush tea tastes better than good morning tea. But wushwush tea and good morning tea are produced by midroc company. This company is responsible for joblessness in Ethiopia by using technology instead of labor force. So Hana,s argument must be rejected

See also the following examples:

1. Professor Conway complains of inadequate parking on our campus. But did you know that last year Conway carried on a torrid love affair with a member of the English Department? The two used to meet every day for clandestine sex in the copier room. Apparently they didn't realize how much you can see through that fogged glass window. Even the students got an eyeful. Enough said about Conway.
2. Environmentalists are continually harping about the dangers of nuclear power. Unfortunately, electricity is dangerous no matter where it comes from. Every year hundreds of people are electrocuted by accident. Since most of these accidents are caused by carelessness, they could be avoided if people would just exercise greater caution.
3. There is a good deal of talk these days about the need to eliminate pesticides from our fruits and vegetables. But many of these foods are essential to our health. Carrots are an excellent source of vitamin A, broccoli is rich in iron,

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 not enough evidence in an argument for a reasonable man to believe the conclusion.
- ❑ However, these forms of fallacies often involve emotional grounds for believing the conclusion.
- ❑ Commonly there are six forms of fallacies of weak induction.
 1. Appeal to unqualified authority
 2. Appeal to ignorance
 3. Hasty generalization
 4. False cause fallacy
 5. Slippery slope
 6. Weak analogy

9. Appeal to Unqualified Authority (Argumentum ad Verecundiam)

- **It occurs when the cited authority or witness is not trustworthy because of:**
 - i. lack of the required expertise.
 - ii. Biasedness or prejudice.

E.g. 1

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.

E.g.2

James W. Johnston, Chairman of R. J. Reynolds Tobacco Company, testified before Congress that tobacco is not an addictive substance and that smoking cigarettes does not produce any addiction. Therefore, we should believe him and conclude that smoking does not in fact lead to any addiction.

Ex.3

Dr. Bradshaw, our family physician, has stated that the creation of muonic atoms of deuterium and tritium hold the key to producing a sustained nuclear fusion reaction at room temperature. In view of Dr. Bradshaw's expertise as a physician, we must conclude that this is indeed true.

10. Appeal to Ignorance (Argumentum ad Ignoratiam)

- ❑ Is committed 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.

Form:

X is true because no one has proved it false. Or
X is false because no has proved it true.

E.g.1

Many scientists tried for decades to find cure for HIV/AIDS, but no one succeeded. From this, we can conclude that, HIV ADIS is non-curable disease.

E.g.2

People have been trying for centuries to disprove the claims of astrology, and no one has ever succeeded. Therefore, we must conclude that the claims of astrology are true.

- ❑ **See also the following examples and identify whether fallacy is committed or not:**

Ex.3.

Teams of scientists attempted over a number of decades to detect the existence of the luminiferous aether, and all failed to do so. Therefore, the luminiferous aether does not exist.

Ex.4.

No one has ever seen Mr. Andrews drink a glass of wine, beer, or any other alcoholic beverage. Probably Mr. Andrews is a nondrinker.

Ex.5

Members of the jury, you have heard the prosecution present its case against the defendant. Nothing, however, has been proved beyond a reasonable doubt

11. Hasty Generalization (Converse Accident)

- ❑ It is a fallacy that affects inductive generalization.
- ❑ Committed when the sample used to draw the generalization is not representative of the group.
Or
- ❑ Samples are atypical or samples are biased or too narrow

E.g. 1

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.

E.g. 2

Do most americans believe in God? To find out, I asked more than ten thousand scientists at colleges and universities throughout America. Less than 40 percent of said they believe in God. The conclusion is₂ obvious: most Americans no longer believe in God

12. False Cause fallacy

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

Form:

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

E.g. 1

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)**

Form: because event A occurred before event B, A is the cause for B

E.g. 1 A black cat crossed my path and latter I tripped and sprained my ankle.

It must be that black cats really are bad luck.

E.g. 2

Two days after that old hag tesfaye moved into the village, my cow died. That witch must have put a hex on my cow!

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

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

Form: because A and B regularly occur together, A is the cause for B.

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.

E.g. Every spring we scarify a virgin to the sun god, and every spring the life-giving rain comes. Therefore, scarifying a virgin to the sun god causes a life-giving rain to come.

iii. over simplified cause.

Form: A is the sole cause for B when in fact there are several causes for B.

E.g. 1.

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.g. 2.

Violent crimes has declined steadily in recent years. Obviously, tougher imprisonment policies are working.

13. 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.

Form: We cant allow A because A will lead to B, and B will lead to C, and we are sure as a heck don't want C!

E.g. 1

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.

E.g.2

Immediate steps should be taken to outlaw pornography once and for all. The continued manufacture and sale of pornographic material will almost certainly lead to an increase in sex-related crimes such as rape and incest. This in turn will gradually erode the moral fabric of society and result in an increase in crimes of all sorts. Eventually a complete disintegration of law and order will occur, leading in the end to the total collapse of civilization.

14. Weak Analogy

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

E.g.1

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.

See also the following examples and identify whether it commits a fallacy or not.

The flow of electricity through a wire is similar to the flow of water through a pipe. Obviously a large-diameter pipe will carry a greater flow of water than a pipe of small diameter. Therefore, a large-diameter wire should carry a greater flow of electricity than a small-diameter wire.

The flow of electricity through a wire is similar to the flow of water through a pipe. When water runs downhill through a pipe, the pressure at the bottom of the hill is greater than it is at the top. Thus, when electricity flows downhill through a wire, the voltage should be greater at the bottom of the hill than at the top.

Harper's new car is bright blue, has leather upholstery, and gets excellent gas mileage. Crowley's new car is also bright blue and has leather upholstery. Therefore, it probably gets excellent gas mileage, too.

Fallacies of Presumption

- ❑ the premises presume what they purport to prove.
- ❑ The truth of the conclusion is uncertain or implausible.
- ❑ **This kind of fallacy contains:**
 - 1. Begging The Question**
 - 2. Complex Question,**
 - 3. False Dichotomy**
 - 4. Suppressed Evidence**

15. 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, which in fact is not.

- 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.

16. 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 itself 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.

17.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.

18. 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

- **19. 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 conclusion it describes natural law.

- E.g.2) Astronomers study stars. Nicole Kidman is a star. Therefore, astronomers study Nicole Kidman.

- Stars - in the first premise it describes galaxy

Star- in the second premise it describes celebrity

20. 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.

21. Composition

- It 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.
- 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**.

22. Division

- It 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.

3. This pie is delicious. Therefore, every ingredient in this pie is delicious.

- 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).