

Chapter Four: Informal Fallacies

Introduction

A *fallacy* is a defect in an argument that consists in something other than merely false premises. Moreover, fallacies can broadly be divided into two types, formal and informal. As it has been underlined in the previous chapters, *the logical connection between the premises and the conclusion is the central criterion to distinguish good arguments from bad ones*. And this chapter focuses on fallacy in general and informal fallacies in particular which basically cause bad arguments. Most of the time, fallacy can be understood as false or mistaken belief; however, logic perceives it as *a defect in the reasoning processes of arguments*. Thus, fallacy can principally be understood *as a defect in reasoning*. To further understand the notion of fallacy, it forces us to go back to the etymological origin of the word. For that matter, the term fallacy comes from the Latin word “fallacia”, which means *deception, trick or cheating*. This implies that fallacy is a defect of an argument which deceives or tricks the readers or audiences since it makes an argument appear good, correct or logical, which in fact is not. Thus, fallacies basically trick readers and listeners in to thinking that the argument forwarded to them is logical or correct. It is true that we have four essential criteria's of a good argument. So a good argument must fit the following four criteria's;

- *The relevance criterion*- the premise of a good argument must be relevant to the truth of the conclusion.
- *The acceptability Criterion*- the premise of a good argument must also be acceptable.
- *The Sufficient Ground Criterion*- the premise of a good argument must also provide sufficient grounds for the truth of the conclusion. Accordingly, the premise of a good argument must be sufficient in number, kind and weight.
- *The rebuttal Criterion*- a good argument should also provide an effective rebuttal to the strongest arguments against one's conclusion and perhaps to the strongest arguments in support of the alternative position.

Consequently, we can say that if a given argument fails to satisfy (one or more than one) the four criteria's mentioned above, then that argument become bad argument. Thus, fallacious argument is an argument which violates the above criterion of a good argument.

Fallacies can broadly be classified into two types: *formal and informal*. Formal fallacies are committed when the form or logical structure of arguments are violated. It involves an explicit use of an invalid deductive argument forms. Indeed, a deductive argument is invalid and fallacious formally when 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. In other words, through identifying the form or structure of invalid deductive arguments, one can detect those formal fallacies. *Informal fallacies*, on the other hand are *errors in reasoning* which are detected through *examining the content of an argument*, not through detecting the form of an argument. Informal fallacies, however, may appear in both deductive and inductive arguments. 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*.

3.1 Fallacies of Relevance

Fallacies of relevance are committed in one argument, *when premises are not relevant to its conclusion*, and that therefore, cannot possibly establish its truth. In other words, those fallacies, which are included under relevance, involve premises, *which are logically irrelevant to the conclusion*, but for psychological reasons, they may seem relevant. In any case, all fallacies of relevance commonly share the following basic features:

- *The premises of an argument are logically irrelevant to the conclusion of an argument; however, they are psychologically relevant as they seem correct or persuasive.*
- *The connection between the premises and the conclusion is emotional, not logical.*

Thus, the task of distinguishing genuine and logical evidence from various forms of emotional appeal is mandatory to identify those fallacies of relevance. And, there are around eight fallacies under fallacy of relevance to which their details are as follows:

1. Appeal to force or stick fallacy (*Argumentum ad Baculum*).

This type of fallacy is committed whenever a conclusion is defended through possessing physical or psychological threats to those who do not accept it. In other words, logical evidences are replaced by implicit as well as explicit threats or pressures on the audiences to make them accept the arguer's conclusion. Thus, appeal to force fallacy is committed when;

The arguer imposes her/his position through employing threats of force or any psychological intimidation in its premises so as to make the audiences or readers accept her/his conclusion. This is achieved through indicating that some danger will be happen on those who do not accept the position. But, those psychological as well as physical threats do not have any logical relevance; threats that are emotional appeals with no logical foundation.

Examples: (1) *Child to its Playmates:* Arsenal is the best football club in the world, if you don't accept this, I am going to call my brother and he will through you out!

(2) *Wife to husband:* I want to spend a weekend in Langan and if you don't let me there; I am going to pack up all my stuffs and let you live alone.

2. Appeal to Pity (*Argumentum ad Misericordiam*)

The word 'Misericordiam' is originally from Latin which literally means 'a pitying heart' which in turn implies the request of someone to others so as to get mercy, sympathy or any a kind of excuse. Thus an appeal to pity fallacy basically occurs when an arguer tries to pose a conclusion by evoking pity from the listeners or readers. In other words, the fallacy is committed when the emotional appeal which raises the pity of the listeners or readers replace logical evidences or justifications.

Examples: (1) *An attorney to the judge;* Members of the jury, I realize there is a good deal of evidence that these two brothers killed their parents. But they are now orphans. They have no one to take care of them. They must now face the cruel world afraid and alone. Surely they are not guilty of these heinous crimes.

(2) *A Student to her professor;* Professor Kebede, it would be wrong for you to flunk me for cheating. I am a single mother, and to provide for my two kids. I have to work three jobs. At the end of the day, I am absolutely exhausted, and after I drag my weary body home. I have neither the time nor the energy to study.

3. Appeal to the People (*Argumentum ad Populum*).

It is natural that everyone wants to be accepted, loved, and esteemed by others. However, the problem lies on how we can secure this desire. *Ad populum* fallacy, which appeals to emotion, is usually employed by speakers and writers so as to get acceptance from others. This is usually the case when propagandists and demagogues deliver their speech to the crowds or public. In other words, these public figures usually commit appeal to people fallacy since they forward premises with contents of emotive and expressive languages and devices so as to raise the mob mentality of the crowds and make the crowds accept their side or conclusion. Such an effort in an argument replaces the laborious task of presenting evidences and justifications with some logically irrelevant appeals to emotion, which ultimately results in the fallacy concerned.

Most political figures or propagandists are committing this fallacy, while they are trying to get support of their respective crowds in the name of patriotism on their fight against the allies. It is also found in advertising industries in the sense that every attempt in the industry is made to associate some products being advertised with things of which we can be expected to approve strongly, or which excite us favorably. Most importantly, *ad populum* fallacy involves either **direct** or **indirect** approaches. It is direct, when the arguer addressing a large group of people through writing or speech, excites the emotions and enthusiasm of the crowds so as to win acceptance. As it has been stated before, political candidates for election, military leaders and other public figures usually employ propaganda so as to raise their subject and make them accept their conclusion. In other words, these propagandists, in one way or another, directly penetrate or manipulate the crowds' consciousness with relentless appeals to emotions of any kind.

Examples: (1) *A leader to his/her followers:* "Fellow citizens! Today we are threatened with the loss of our sacred to bear arms. A pack of gutless, liberal politicians wants to outlaw the sale of handguns. But they won't get away with it. The right to bear arms is guaranteed in the constitution! Our blessed fore fathers created this right and bestowed it on all Americans. Protect the constitution! Hear our cry! Down with the gutless Pinkos!"

On the other hand, *ad populum* fallacy is committed indirectly in the sense that the arguer directs his or her appeal not to the crowd as a whole directly, rather to some aspects of their relationship to the crowd. This approach is usually common in advertising industry. Most of the time,

products are advertised in association with things, which excite us favorably. Any kind of advertisements have the power to catch up the feeling of the audiences as buyers emotionally associate themselves with the strength, dignity and health which are wrongly fulfilled by the products. However there are three types of indirect approach to ad populum fallacy; appeal to bandwagon, appeal to vanity and appeal to snobbery.

- (1) **Appeal to Bandwagon** emphasizes that the majority's choice is the correct one and urges the audiences to join them. In other words, if some argue as you will be left behind or left out of the group/majority if you do not use the product.

Example: *Sure, this is a very fantastic gum with lovely flavor. That is why the majority of the people in Addis Ababa chew it than any other gums.*

- (2) **Appeal to vanity** is committed when an arguer associates products with celebrities and popular figures such as artists, athletes, footballers, etc. and informs the audiences that if they buy the item they will also be admired too.

Example: *You have got to see Serawit Fikre's latest film (Hiroshima) immediately. It is breaking the country's film records in terms of audiences, and everyone is talking about it.*

- (3) **Appeal to snobbery** committed when an arguer propounds the position that "if you want to be a member of the selected few you should use this product" i.e.-products are usually associated with persons with high social positions (Business man, Kings, queens, and princes).

Example: *Bon café in bole area, no doubt, is the best café in Addis Ababa. That is why distinguished persons like Ali Birra, Tilahun Gesesse, Mahlet G/iyorgis... are always there on weekends. Come and enjoy your weekends at Bon café!!!*

4. Argument against the person (Argumentum ad Hominem)

Ad hominem fallacy is committed, when the arguer, tries to attack his opponent personally instead of responding to his/her argument. And there are three types of the fallacy of ad hominem:

- (1) **Fallacy of ad hominem (Abusive)**

This is the fallacy committed when an arguer engages in direct personal attacks or abuses against his opponent and makes them as grounds to reject his claim. Thus, rejecting our opponent by directing our attack towards his personality rather than the contents of his argument will result in the fallacy concerned.

Example: *Ato Adugna has argued for increased funding for the disabled people. But nobody should listen to his argument, for he is such a nasty man who has no concern even of his family.*

(2) Fallacy of ad hominem (Circumstantial)

This is the fallacy committed by an arguer who tries to discredit his opponent's arguments by alluding to certain circumstances that may affect his opponent. Indeed, it is not directed personally to the arguer, but on the circumstance he belongs.

Example: *Ato Mohammed has just argued that we replace the public school system with private education. He argued that way, for he has no kids, and he does not want to pay any more taxes for public education. For this reason, no one should accept his points of view.*

(3) Fallacy of ad hominem tuquoque (you too).

The word "tuquoque" is originally from Latin which literally means 'you too' or 'you did it too' which in turn implies that the arguer's action is not consistent or it is contrary with what he argues for. Thus the fallacy is committed when we argue that our opponent's claim is false since his/her argument is contrary with what he has said or done before.

Example: *Ato Gebru has just given us the reason why we should place more emphasis on divorce. But he has stated this for he himself divorce his wife w/ro Emabet last month.*

5. Accident

This is the fallacy committed by an arguer who intends to wrongly apply general rule to specific case, which in fact cannot cover the former. In other words, this fallacy is committed when the general rule, principle or truth is wrongly applied to particular instance or situation.

Example: *Children should obey their parents commands. Therefore, little chala should follow his alcoholic fathers orders to drop out of school and get a job.*

6. Straw Man

This fallacy occurs when someone distorts his/her opponent's argument for the purpose of more easily attacking or demolishing it. In other words, when someone distorts and substitutes the original version of his/her opponent's argument by a deliberately weakened version and tries to attack the distorted one, s/he commits straw man fallacy.

Example: *Dr. Bekele has just argued against affirmative action for women. It seems what he is saying is that women should stay out of the work place altogether. Just keep them barefoot and pregnant. That is what Dr. Kebede wants. Well! I think we are all smart enough to reject his argument.*

7. Missing the point (*IgnoratioElenchi*)

Missing the point illustrates a special form of irrelevance, which occurs when the premise of an argument supports the conclusion, which has nothing to do with correct conclusion. In other words, when someone draws a conclusion, which completely misses the point, s/he commits missing the point fallacy. In any case the fallacy, which is represented by the Latin word, *ignoratioelenchi*, which means ignorance of the proof, implies that the argument has a problem of the logical implication of the premise.

Examples: *(1) The crime of theft is increasing at an alarming rate in Adama town. The solution is clear, we have implement death penalty immediately.*

8. Red Herring

Red herring fallacy will be committed when an arguer diverts the attention of the listeners or readers by changing the original subject to some totally different issue without the listeners or readers notifying it. In other words, this fallacy is an attempt to divert the attention of audiences to a totally different issue. The fallacy is sometimes called "Off the track" fallacy since an arguer who commits this fallacy ignores the topic under discussion and shifts the attention of his audiences to another issue. All at a sudden, an arguer changes the subject to a completely different idea and makes a conclusion upon this changed idea. In any case the model for red herring fallacy look like this:

- *An idea under discussion will be changed in to a totally different issue and then the conclusion will be drawn based on this changed subject.*

Example: *Ato Bedilu, a senior official in water resource management, has argued that clean water Act should never be weakened. But the point is that water is one of the most common substances on earth. Over two-thirds of our planet's surface is covered with water, and massive amounts of frozen water cover both poles. If the ice caps were ever to melt, ocean levels would rise several feet. Obviously the official has been misinformed.*

3. 2 Fallacies of Weak induction

Those fallacies included in weak induction occur not because the premises are logically irrelevant to the conclusion; rather it *is because the connection between the premises and conclusion is not strong enough*. The evidences which are supposed to support the conclusion are not good to make any reasonable person accept it. And, like those fallacies included in relevance, fallacies of weak induction employ emotional grounds to support the conclusion. At any rate, fallacies of weak induction are commonly characterized by an argument with:

- Its premises are not sufficient to arrive at the conclusion,
- Its premises probably support the conclusion and they are accompanied by emotional appeals.

9. Appeal to unqualified authority (Argumentum ad Verecundiam)

It is customary that individuals need to get information; suggestion, comment, opinion and advice from others so as to achieve a certain conclusion. However, there are cases where those individuals who are entitled to deliver information might not be trustworthy because:

- (a) They lack the expertise in a certain profession,
- (b) They might be biased or prejudiced,
- (c) They might have the motive to lie or disseminate “misinformation”.

Thus, the fallacy of unqualified authority is committed when we attempt to support our claim by:

- (a) Citing the statement of another person who is not an authority in the field of specialization, or
- (b) Referring the judgment of an authority that is likely to be biased, or (c) Referring a person who has the habit of telling lies or disseminating wrong information.

Example: *Omer, who is a well-known astronomer, says that AIDS epidemic is caused by a perverse alignment of the planets, and that there is nothing anyone can do about it.*

Therefore, we can only conclude that all of these efforts to find a cure for AIDS are a waste of time.

10. Appeal to ignorance (Argumentum ad Ignorantiam)

This fallacy is committed when the lack to evidence or proof for something is used to support the conclusion. In other words, when the premises of an argument state that nothing has been proved in one way or other about something and the conclusion then makes a definite assertion about that thing. Thus, one's ignorance, lack of evidence, knowledge or information about something definitely supports the conclusion in appeal to ignorance fallacy. In any case, ad ignorantiam fallacy will be committed when:

- Someone argues that something is the case (true) because no one has proved to be false.
- Someone argues that something is not the case (false) because no one has proved it to be true.

Example: *Nobody has ever proved the existence of ghosts. Therefore, we have no alternative but to conclude that ghosts are mere figments of the imagination.*

However, there are exceptional cases where appeal to ignorance fallacy will not be committed:

- If qualified researchers or team of scientists investigate a certain phenomenon within their range of expertise and found nothing about it, it is at least an inductively strong argument though it is not a deductively valid one.
- There are also cases where there is not always necessary that investigators have special qualifications. The kinds of qualifications needed depended on the situation that the more ability to see and report is sometimes sufficient.

11. Hasty generalization (Converse Accident)

The fallacy of hasty generalization, which is the opposite of accident, is committed when an arguer tries to generalize about a thing or an event based on insufficient evidence; vary limited information and unrepresentative samples about it. In other words, drawing a conclusion or generalization based on unrepresentative or small evidence or information will result in an argument with hasty generalization fallacy. It is usually committed by individuals who develop a

negative attitude or prejudice towards others' belief, language, political position, ethnic origin, color and others.

Example: *A reporter in the local newspaper exaggerated her story just to make it more exciting, and a reporter on the evening news got her facts mixed up. The conclusion is apparent that you just cannot trust the news media today.*

However, the mere fact that a sample may be small does not necessarily guarantee that the fallacy of converse accident occurs. Other factors sometimes make the argument to be strong though its samples are small.

Example: *Ten Milligrams of Substance Z was fed to four mice, and within two minutes all four went into shock and died. Probably substance Z, in this amount, is fatal to the average mice.* This, for instance is not fallacious.

12. False Cause

False cause fallacy occurs whenever the link between premises and conclusion depends on some imagined causal connection that properly does not exist. It is an attempt to suppose that 'X' causes 'Y' where as 'X' probably does not cause 'Y' at all. In other words, the fallacy is committed when someone infers causal explanations from premises, which cannot provide sufficient evidence to it. False cause fallacy can further divided in to three types:

A. Post hoc ergo propter hoc fallacy

As a Latin phrase post hoc ergo propter hoc fallacy may be translated as “*after this, therefore an account of this.*” And, the fallacy is shortly named as post hoc fallacy and it is committed when we arrive at a certain conclusion by claiming that one thing is the cause of another thing because it proceeds in time. A particular event 'X' is caused by event 'Y' merely because 'X' follows 'Y' or 'Y' precedes 'X' chronologically. Post hoc fallacy usually occurs in cultural superstitions. Particularly, in our cases when we encounter some accidental misfortunes, we usually associate them with bad lucks. However, such kinds of assertion are not logically convincing as they confuse consequences with temporal precedence.

Example: *Every time I take a shower, the telephone rings. Therefore, since I'm dying to talk to somebody right now, I should jump in the shower.*

B. Non Causa pro causa

The Latin phrase *non causa pro causa* can be translated as ‘*not the cause for the cause*’. The fallacy is committed when someone argues that something is the cause of an effect when it is not in reality and confusion occurs between cause and effect.

Example: *There are more churches in Ethiopia today than ever before and more HIV victims ever before; so, to eliminate HIV we must abolish the church.*

C. Oversimplified cause fallacy

Oversimplified cause fallacy is committed when relevant causal antecedents of an event are oversimplified by introducing factors insufficient to the account of the effect. And, it will be committed when the roles of one or more of those factors are deliberately or intentionally overemphasized at the expense of others.

Example: *Why most students fail in logic is because teachers do not come to class regularly.*

13. Slippery Slope fallacy

Slippery slope fallacy is a Variety of false cause fallacies chained together. In other words when false cause fallacy takes place in series of events or actions, slippery slope fallacy will occur. This is of the fact that because it is logically mistaken for someone to consider a particular action or event (usually the first one) in series of events causes for series of consequences. In other words, considering the first event, action or cause responsible for all events or actions in series of events or actions is not convincing.

Example: *It is not a good idea to put your child in a day care center. Separation from parents causes isolation and alienation soon the child becomes incapable of relating to other children, and this inability to relate causes depression. As the child gets older, the depression leads to psychosis. The final result is either suicide or a life wasted in a mental institution.*

14. Fallacy of Weak analogy

Fallacy of weak analogy is committed basically when the analogy or similarity between two things or situations is not strong enough to support the conclusion to be drawn. In other words, weak analogy fallacy will be committed when the significant differences between two or more

things compared are ignored or when two contrasted things are considered alike only in unimportant ways.

Example: *No one would buy a pair of shoes without trying them on. Why should anyone be expected to get married without premarital sex?*

3.3 Fallacies of Presumption

To presume means to take something for granted or to assume a given idea as true or correct which in fact needs further proof, explanation or evidence. And, the fallacy of presumption will be committed when the assumption given in the premise is not supported by proof but the arguer maintains that it does not need proof and s/he invites his/her audiences accept it as it is. Accordingly, the fallacy contains tricky and confusing expressions for the purpose of concealing the wrong assumptions stated in the premise. In any case, fallacies of presumption are usually characterized by:

- Drawing a conclusion from statements which are questionable from the very beginning.

15. Begging the question (Petitio Principii)

Begging the question fallacy basically occurs when someone uses some form of phraseology, which tends to conceal the questionably true character of a key premise, and, if the audience is deceived into this argument as sound, when in facts it may not be. In any case, there are two requirements to be fulfilled for this fallacy to occur:

- (1) The argument must be valid,
- (2) Some form of phraseology must be used to conceal the questionably true character of a key premise.

Moreover, though the kind of phraseology used differs from argument to argument, it is inevitable for the conclusion to support the questionable premise. One way of doing so is through formulating premise and conclusion of an argument in two slightly different ways; however, they have essentially the same meaning.

Example: *We can be certain that this photo is of President Barack Obama's, because the person in the photo looks just like him.*

Here, the premise and the conclusion mean the same thing so that they both are true and valid as well. However, the logical question to be raised here is whether the premise is true regardless of the context of the argument i.e. the truth of the premise is unavoidably questionable. But, when the premise is preceded by the conclusion, the alleged truth is strengthened; however such strength is attributed to the psychological illusion that results from saying the same thing in two slightly different ways. And, when a single proposition is repeated in two slightly different ways without the repetition becoming obvious, the suggested truth of the proposition is reinforced. And, begging the question can be presented in chains of arguments. Thus, begging the question is usually called circular reasoning that:

- ✓ The premise is restated in the conclusion in different phrases or words in reality, or
- ✓ The premise is not essentially different from the conclusion.

16. Complex Question

One commits the fallacy of complex question when s/he asks two or more questions in a way that makes it appear that only one question has been asked. When we forward question to someone we make presuppositions of answers within it. Asking questions to respondents to answer it genuinely without being confused and tricked is not wrong. But, when the question is complex and aimed only at trapping the respondent to acknowledge something that he/she is not willing to tell, it becomes fallacious. A Complex question, however, is not an argument as such, but involves an implicit argument and this becomes explicit when the response is added to the complex question. Most complex questions are mostly used by lawyers and judges when examining defendants to admit crimes. To see how a complex question can prejudge an issue in the form of a question, look in to the following example:

Example: *Have you stopped in involving such crimes?*

Here, what the defendant can answer is either “Yes”, or “No”. And if he answers “Yes”, so it implies that he has previously been involved in such crimes so that he is guilty. And if he

answers “No” it means he has continued in criminal ways, and is guilty. Therefore, he would be trapped in both cases. Depending on the answer given by the defendant the prosecuting attorney may therefore establish arguments like:

(a) *“You are asked whether you give up your criminal ways. You answered, ‘Yes’. It follows that, you have previously been a criminal.”*

(b) *“You are asked whether you give up your criminal ways, you answered ‘No’. It follows that, you have previously continued involving in crimes”*

17. False dichotomy

The fallacy of false dichotomy can be otherwise called as “*false bifurcation*”, “either... or”, or “false dilemma” fallacy. And this fallacy is committed when the arguer insists that only two alternatives are possible in a given situation (when in fact the alternatives presented are exhaustive i.e. because more alternatives are still possible). In other words, the fallacy of false dichotomy occurs whenever one is faced with a very limited numbers of alternatives, and when one attempts to bring a premature end to a debate by declaring a dilemma when none exists. Other alternatives may be possible, or other courses of action can be persuaded. Thus, one commits the fallacy of false dilemma when he poses a restrictive set of undesirable alternatives when other legitimate alternatives may be possible. And, the fallacious nature of false dichotomy lies in the attempt by the arguer to delude the reader or listener into thinking that the disjunctive premise presents jointly exhaustive alternatives, and is therefore true by necessity.

Example: *Either we elect EPRDF, or the country’s fate will be worsened. The choice should be obvious, for no one wants the country fail. Thus, everyone should elect EPRDF.*

18. Suppressed Evidence

This is an inductive argument that overlooks an important piece of evidence (premise) that if it were considered, the conclusion to be drawn would be very different from the one drawn. In other words, this fallacy is committed when the argument ignores some important evidence/s that outweigh/s the presented evidence and entails a different conclusion. The evidence that is suppressed must be so important that it outweighs the presented evidence, and it must require a different conclusion than the one drawn. Usually suppression is intentional as the arguer

deliberately omits the key evidence (premise) and instead emphasizes a certain point in order to hide the relevant premise that would entail totally different point.

Example: *Addis Ababa University deserves to be one of the best Universities in Africa as it has impressive buildings, beautiful gates, and an attractive fountain.*

3.4 Fallacies of ambiguity

Two fallacies arise from the occurrence of some form of ambiguity in either the premise or the conclusion (or both). The fallacies of ambiguity include Equivocation and Amphiboly

19. Equivocation

The fallacy of equivocation occurs when a word or phrase in a single argument are used in two different senses or connotations which in turn leads to a conclusion which is not supported by its premises. In other words, fallacy of equivocation committed when a single word in the premise of an argument is used in two different contexts and when these two contexts of a single word are wrongly assumed as one or similar in the conclusion.

Example: *Some triangles are obtuse. Whatever is obtuse is ignorant. Therefore same triangles are ignorant.*

20. Amphiboly

The fallacy of amphiboly occurs when someone misinterprets a statement which is ambiguous because of some structural defects and draws a conclusion based on such misinterpretation. And, someone other than the arguer usually asserts the original statement. Moreover, the structural defect is usually a mistake in grammar, punctuation, a pronoun, an ambiguous antecedent of a pronoun, careless arrangements of words and the like. Because of these and other related defects, the statement may be interpreted or understood in two distinct senses. The arguer usually selects the unintended interpretation and draws a conclusion based up on it.

Example: *Hussein told Tolossa that he painted his picture hanging on the wall of his bedroom. Obviously Tolossa is quite an acrobat.*

Contracts and wills are areas where a case of amphiboly causes serious problems or controversies. Ambiguous statements and alternative interpretations would lead to different conclusions. There are two important ways in which amphiboly differ from equivocation.

- ❖ First, equivocation is always because of ambiguity of meaning of one or more words; however, amphiboly involves structural defects in a statement.
- ❖ The second is that amphiboly usually involves a mistake committed by the arguer in interpreting an ambiguous statement made by someone else; whereas the ambiguity in equivocation is typically the arguer's own creation.

3.5 Fallacies of Grammatical Analogy

21. Composition

The erroneous transference of an attribute from parts of something onto the whole as a base for the conclusion of an argument will lead to the fallacy of composition to occur. In other words this fallacy would occur when attributes of parts of a thing are wrongly applied or associated to the whole entity of a thing. Thus, if an arguer argues as: what is true of each part of a whole is also true of the whole or what is true of some parts of a whole is also true of the whole, s/he commits fallacy of composition.

Example: *Each atom in this table is invisible to the naked eye. Therefore, the table is invisible to the naked eye.*

However, if there is a legitimate transference of an attribute from parts on to the whole, fallacy of composition will never be committed.

Example: *Each atom in this piece of chalk has mass. Therefore, the piece of chalk has mass.*

22. Division

The fallacy of division is the exact opposite of composition. As composition goes from parts to whole, division goes from whole to parts. The fallacy occurs when the conclusion of an argument depends on the erroneous transference of an attribute from a whole (a class) onto its parts (members). Accordingly, this fallacy is committed when an arguer argues in such a way that, what is true of the whole is also true of its parts or what is true of a whole is also true of some of its parts.

Example: *Carbon monoxide is a poisonous gas. Therefore, its two components, carbon and oxygen must be poisonous.*

However, such an illegitimate or erroneous transference of attribute from a whole or class onto its parts or members is not always illegitimate or illogical.

Example: *This piece of chalk has mass. Therefore, the atoms that compose this piece of chalk have mass.*

Chapter Summary

A fallacy is principally ***defect in reasoning*** that makes a bad argument appear good. Fallacies can be broadly divided into two: ***Formal*** or ***informal***. Formal fallacy can be identified through analyzing the form of an argument. These fallacies affect only deductive arguments. On the other hand an informal fallacy is a fallacy, which can be detected only by analyzing the content of an argument. And informal fallacies can affect both deductive and inductive arguments. Besides, informal fallacies can be categorized into four broad groups: fallacies of relevance, fallacies of weak induction, fallacies of presumption, and fallacies of grammatical analogy.

When the premises of an argument are ***logically irrelevant, fallacies of relevance*** will occur. And, appeal to force (premises that threaten the observer), appeal to pity (premises that evoke pity from the observer), appeal to people (creating mob mentality in a group of observation), argument against the person (attacking the personality of the opposing person himself rather than his argument), accident (misapplication of general rule) Straw Man (distorting an opponent's arguments), Missing the point (drawing a conclusion different from the one implied by the premises) and Red Herring (diverting the attention of the audience to an entirely different subject), are all included in fallacies of relevance.

Although the premises of an argument are possibly relevant to the conclusion, they do not provide sufficient support for the conclusion so that fallacies of weak induction occur. And appeal to unqualified authority (when an arguer cites an authority who is not qualified), appeal to ignorance (drawing a conclusion from premises that give no positive evidence), hasty generalization (drawing a conclusion from un representative samples), false cause (drawing a conclusion form minor causal connection), slippery slope (drawing a conclusion based on a Chain reaction that is unlikely to occur) and weak analogy (drawing a conclusion from an analogy that is not close enough to support it) are all included in fallacies of weak induction.

When the ***premises presume*** what they purport to prove, ***fallacies of presumption*** occur. And, begging the question (when the arguer creates the illusion that inadequate premises are

adequate), Complex question (concealing multiple questions in a single question), false dichotomy (using a disjunctive statement so as to hide alternatives), and suppressed evidence (ignoring important evidence that requires a different conclusion) are included in fallacies of presumption.

When the conclusion of an argument *depends on some forms of ambiguity*, fallacies of *ambiguity will occur*. Equivocation (when the conclusion depends on a shift in meaning of a word or phrase) and amphiboly (when the conclusion depends on the wrong interpretation of a syntactically ambiguous statement) are considered as fallacies of ambiguity. Finally, when a defective argument appears good owing to a *grammatical similarity* to some argument that is not fallacious, fallacies of *grammatical analogy* will occur. Composition (attribute is wrongly transferred from parts to whole) and division (attribute is wrongly transferred from whole to parts) are fallacies of grammatical analogy.