MODULE 4 LOGIC AND FALLACIES

Unit 1 Basic Aspects of Linguistic Fallacies
Unit 2 Aspects of Material Fallacies Relevant to Semantics
Unit 3 Elements of Logic in Semantics

UNIT 1 BASIC ASPECTS OF LINGUISTICS FALLACIES

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1.0 INTRODUCTION

A major thrust of semantics is to ensure that the meaning of linguistics units is maximally accessible. One way to achieve this is to ensure that we have logical arguments in our presentations. Logic deals with the process of evaluating the truth and falsity of arguments. What is logical is deemed to have the right reasoning. There are, however, times when the strength of an argument is weakened by fallacies.

A fallacy, from its original Latin origin, *fallor* is any error of reasoning, which can lead to deception. Quite a number of fallacies are derived from language use.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
• state the forms of fallacy relevant to semantics;
• describe these fallacies; and
• illustrate their manifestation in language with good examples.

HOW TO STUDY THE UNIT

a.   Read this unit as diligently as possible.
b.   Find meaning of unfamiliar words in the unit using your dictionary.
c.   As you read, put major points down in a piece of paper or jotter.
d.   Do not go to the next section until you have fully understood the section you are reading now.
e.   Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

3.0   MAIN CONTENT

3.1   The Nature and Forms of Fallacies Relevant to Semantics

Fallacies can be formal, material or linguistic/verbal. Formal fallacies occur when conclusions assert what have not been included in the premises. Therefore, the structural validity of the expression is weakened. It also means that the deductive argument presented cannot hold. Material fallacies derive from irrelevance. Such fallacies cannot prove the material truth of the arguments or propositions. The appeal of material fallacies depends on some mistakes related to the truth of the premises or the possibility of such truth being known. Therefore, material fallacies often fail to prove the material truth of their arguments. Thus, the conclusions drawn are usually not true.
Linguistics or verbal fallacies derive mainly from ambiguity as a result of the change or shift created by the formulation of the meaning of words and phrases used in the proposition. There are two main forms of the verbal or linguistics fallacy, which are of interest to semantics. We shall examine them briefly.

3.2   Fallacies of Misinterpretation

Under these general fallacies are:
•   Amphiboly
•   Accent
•   Figure of speech
•   Hypostalisation.

Amphiboly
In amphiboly, there is ambiguity arising from a loose or inappropriate grouping of words in a structure. There is usually the potential for multiple interpretations. Consider the following.

(i)   Nigerian educated men are weak

The confusion derives from the interpretations below.
a)   Men educated in Nigeria
b)   Nigerian men who are educated
c)   They are physically weak
d)   They are morally weak.

Accent
The fallacy of accent arises as a result of misplaced emphasis. There is usually the misinterpretation of the original meaning of the sentence as a result of the wrong emphasis or the challenge of quoting one out of context. Emphasis can be achieved in the print media by the use of font types and sizes, both of which can mislead the reader.

For instance, during the screening for ministerial appointment in Nigeria, some newspapers carried a screaming headline such as:

(i)   "Ngozi Okonjo-Iweala Missing" (whereas what they meant was that her name was not on the list of nominees presented to the senate)
(ii)   Another example was noted in another newspaper-"UNILAG Vice-Chancellor in Police Net" (a fake Vice-Chancellor apprehended)
Most readers would be carried away by the capital letters, whereas the real message is in the small letters.

Figures of Speech (Figure Dictions)
In a specialised way, figures of speech derive from the confusion over words, which are perceived to be similar in sound or structure – as in
•   Accent   -   assent
•   Council   -   counsel
•   Eligible   -   illegible
•   Illicit   -   elicit

Greater import of the figure of speech occurs in the literal interpretation of metaphorical expressions, including the following.

(i)   John kicked the bucket
(ii)   He swallowed his pride

Hypostalisation
Wherever abstract concepts are presented as if they have the capacity to produce empirical evidence, we have hypostalization. Consider the following example.

(i)   Experience taught him great lessons

SELF-ASSESSMENT EXERCISE 1

List the different forms of the fallacy of misinterpretation.

Read 3.3 above for the correct answer.

3.3   Fallacies of the Misuse or Misunderstanding of Language

We shall explore the following four fallacies under this category.

*   Equivocation
*   Composition
*   Division, and
*   Bifurcation

Equivocation – double talk or equal voice (*aeques vox* in Latin) described the possibility of using the same term for different senses in the same discourse. Consider the following example.
Rich men enjoy *rich* meals
The use of the word "rich" in the two instances will definitely cause confusion if "rich" means related to involving enormous wealth. The illustration will be clearer with this example taken from Ogbulogo (2005).

(i)   People should obey every good law
(ii)   The law of identity of reference is a good one
(iii)   Therefore, people should obey the law of identity of reference.

The fallacy of the conclusion derives from the variation in the meaning of law in the two preceding sentences.
The fallacy of composition derives from the assumption that what applies to a part of an element applies to the totality of that element. If we assume that since players in a team are skilful, the entire team would be harmonious and visionary. It will be fallacious to argue that since those who provide instructions at the primary, secondary and tertiary levels of education are all teachers, they should all be equally remunerated. This fallacy arises principally from neglect of the collective and distributive uses of such general terms as all and every. Collective terms relate to the whole while distributive terms make reference to each and separate members.
The fallacy of division arises when it is believed that the elements of a whole should be shared by all its constituent part. It will be fallacious to assume that since Judith comes from a family of beautiful ladies, she should also be beautiful. It is easy to observe that the fallacy of division is the converse of composition.

The fallacy of bifurcation (false dilemma) manifests when the full range of possible options to a question is erroneously reduced to just two alternatives. This reality is evident in the choice of many words occurring in pairs, suggesting just opposites. Consider the following.

(i)   If she is not wise, then she must be foolish.
(ii)   The members will be either rich or poor.

SELF-ASSESSMENT EXERCISE 2

Highlight some fallacies of misunderstanding of language.

4.0   CONCLUSION

In this unit, we have explored basic fallacies associated with meaning in language use. We noted that fallacies occur as errors in reasoning, which can lead to deception. Indeed fallacies weaken the force of an argument. Therefore, our study of semantics is found more profitable if we devise ways of maximising access to the intended meaning.

5.0   SUMMARY

In this unit, we have studied the nature of fallacies related to semantics. We have also examined fallacies associated with the misunderstanding and misinterpretation. Dwelling centrally on semantics, we have discussed formal, material and linguistic fallacies. In all this, we noted that it is the irrelevance of the material in a structure that creates fallacies. However, linguistic or verbal fallacies derive from ambiguity or shift of emphasis. Fallacies of misinterpretation find expression as amphiboly, accent, figures of speech and hypostatisation. Fallacies of misunderstanding of language occur as equivocation, composition, division and trifurcation.

6.0   TUTOR-MARKED ASSIGNMENT

i.   Describe the nature of fallacies in language.
ii.   Explain any four fallacies of misinterpretation of language
iii.   Discuss any four fallacies of misunderstanding of language.

7.0   REFERENCES/FURTHER READING

Ogbulogo, C. (2005). *Concepts in Semantics*. Lagos: Sam Iroanusi Publication.

Uduma, U. O. (1998). "Fallacies." In Omoregbe J. (Ed.) *Introduction to philosophy and logic*. Lagos: Philosophy Department, University of Lagos.

UNIT 2 ASPECTS OF MATERIAL FALLACIES RELEVANT TO SEMANTICS

CONTENTS

1.0 INTRODUCTION

It will be recalled that on our discussion of linguistic fallacies, we made reference to material fallacies. In this unit, we shall explore in some detail different manifestations of material fallacy.

The study of meaning will not be complete if we focus mainly on linguistic fallacies. There are indeed other forms of fallacies, which derive from a compromise in the truth of the premises of the arguments.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
- discuss fallacies of accident;
- explain question begging fallacies;
- give examples of fallacies of accident and fallacy of converse accident;
- discuss fallacies associated with the bandwagon and attacking the straw man; and
- explain how fallacies of appeals weaken the logic of argument.

HOW TO STUDY THE UNIT

  a.   Read this unit as diligently as possible.
  b.   Find meaning of unfamiliar words in the unit using your dictionary.
  c.   As you read, put major points down in a piece of paper or jotter.
  d.   Do not go to the next section until you have fully understood the section you are reading now.
  e.   Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

3.0   MAIN CONTENT

A premise is the basic idea on which other ideas and conclusions are based. If the premise of an argument is false, the conclusion cannot be valid. Material fallacies are classified based on their structures. Presented below are the common examples.

3.1   Fallacies of Accident

Fallacies in this category are of two forms – fallacy of accident and fallacy of converse accident.

Fallacy of accident occurs when a general rule is applied to a specific case – where such a rule would not be applicable. This form of fallacy is common in political and legal arguments. For instance, while most constitutions will provide for the protection of personal freedom, there may be the tendency to argue that even offenders and criminals should not have their freedom curtailed by terms of imprisonment. The fallacy of converse accident is also referred to as the fallacy of hasty generalisation. It occurs when we take specific incidents to be the basis of universal conclusions. Thus, the evidence of that specific event is always restricted, thus making whatever generalisation hasty and invalid. Consider the following generalisation.

(i)   All great footballers are charming
(ii)   Single women cannot be good leaders

3.2   Question Begging Fallacies

We shall consider under this heading, Fallacies of begging the question and fallacies of question begging epithets. The fallacy of begging the question arises when what is intended to be proved as the conclusion is assumed the premise. The fallacy may also occur if one of the truth of

the premises cannot be established without the conclusion being found to be true. There may also be a situation where an issue perceived to be true under particular circumstances inferred from a universal premise. Usually that universal premise is also inferred from a specific case. Thus, a universal proposition is assumed to derive from a case that is only true in certain circumstances. Consider the following examples.

(i)   That utterance comes from men ruled by their wives, because only a man ruled by his wife can say such things.
(ii)   You know he is the wealthiest man in the village because he is the strongest.

Question begging epithets are expressed as adjectives, which carry with them, value judgements. In each of these judgements, there are conclusions that are yet to be proved. Most forms of propaganda exhibit instances of question begging epithets. Consider further, these examples:

These *shameless* university teachers will always line their pockets with ill-gotten wealth from unholy sales of handouts.

3.2   The Complex Question

There is a complex question when we assume a yes or no as the answer to a question that has far greater implications. In many instances of questions, there is the assumption that the basic fact has been established in a yes – no scenario. This situation is apparent in the following questions.

(i)   Why are Blacks interested in self-perpetuation in office? (Has it been proved?)
(ii)   Why do academics turn out to be poor leaders? (Is it always the case?)

It is a common knowledge that questions elicit answers. The real meaning of a question derives from the assumptions it makes. When people are unwary of the full implications of questions, they fall into the trap of creative and crafty users of language, like lawyers.

3.4   False Causal Relationship

There is a false causal relationship when what is assumed the cause of an action is actually not. It may also be a situation when what follows an event is assumed to be caused by that event. In medical circles, this fallacy may link a symptom to an ailment when in fact something else may be happening. Consider this situation:
They became successful after they left the scene of war. Therefore, their success is linked to their new location.

3.5   Attacking the Straw Man

This fallacy also referred to as the smear technique is the practice of attacking the personality or circumstances of the opponent in an argument rather than focusing on the issues. This attack may manifest in the use of offensive language, insults and abuse, rather than proving or disproving the logic of the argument.
There are three variants of this fallacy – the genetic, relational and the well poisoning fallacies. The object of attack in the genetic fallacy is the source or the origin of an argument. There is usually the assumption that good ideas can only come from the good mind-often associated with members of a special group. Often, politicians and administrators who are interested in discrediting opposition deploy this fallacy.
At the relational level, there is the assumption that one's ideas, opinions or arguments are related to one's circumstances. People who have some substance in society are usually perceived to have brighter ideas. For fallacies that poison the well, there is a deliberate attempt to discredit the source of a supporting piece of evidence. This makes the evidence unaccepted.

The following are examples of fallacies that attack the straw man.

(i)   Who would believe the self-imposed leader who is a drunkard and a brute?
(ii)   It will be inconceivable for people to follow the opinions of Mr. Banda, whose parents could hardly train him beyond the primary school.
(iii)   I am sure you are not expecting us to follow the logic of this argument since we know that the data have been compromised all through.

3.6   The Bandwagon

The fallacy of the bandwagon, also described as the snob appeal or the appeal to the people involves the play on the emotions of the people instead of addressing the issues at stake. Emphasis is on appealing to the fears, prejudices, passions and problems of the people even to the detriment of the logic. Politicians, propagandists, lawyers and marketers use this appeal to sway public opinions. Consider the following.

(i)   "Come out of poverty in a grand style; subscribe to be a distributor of our products."
(ii)   "Enjoy the secrets of longevity with our New Life products."
(iii)   "Join the team of high fliers in your examinations, enrol in our tutorial centre."

3.7   Fallacy of Appeals

Apart from the fallacy of the bandwagon, there are a number of fallacies that appeal to pity, authority and ignorance. The fallacy of appeal to pity is intended to arouse emotions of pity and sympathy. The aim is to achieve favourable conclusions or desired actions, even when the facts of the arguments may have been left out. Particular appeal is common in situation that will require dire consequences. Thus, defence counsels resort to it to whip up sentiments. Consider this example.

The accused is the only surviving son of a widow. He has suffered a great deal of deprivation as a youth. If he is convicted and imprisoned, his poor mother will not survive the shock.

The fallacy of the appeal to authority draws its strength by referring to a respected authority or a group of people whose opinions count. Often, such a reference is not relevant, unlike what we have in academic circles when experts build their arguments on the strength of existing authorities.

Consider these arguments.

(i)   Even Bill Gates would envy this computer.
(ii)   Shakespeare would even have endorsed this pen

Note that both Bill Gates and Shakespeare have become names noted in computing and writing respectively.

There is the fallacy of the appeal to ignorance when we assume that every proposition without immediate supporting evidence must be false. It may also occur when a proposition is assumed true if there is no evidence to disprove it. Therefore, the only point of proof is one's ignorance. Consider this example:

If you do not believe in witches, you must bring evidence that they do not exist.

There is also the fallacy of the appeal to force. It is also referred to as the fallacy of swinging the big stick, which occurs when one uses intimidation or threats to force the acceptance of a conclusion. This technique manifests when rational arguments have failed- for example:

If you don't sign to break the strike, you must vacate your accommodation

3.8   The Fallacy of Irrelevant Conclusion

In this fallacy, there is usually the evasion of the real issues. The conclusion to be proved or disproved is ignored and an entirely new conclusion is introduced. Consider the following illustration.

Mr. A:How can you prove the case of sexual harassment against the accused?

Mr. B: How can he be ignorant while he had in the past been charged with aiding and abetting examination misconduct?

Note the two issues being raised.

3.9   The Fallacy of the Argumentative Leap

The fallacy of the argumentative leap occurs when the conclusion drawn from the premises of an argument is not relevant to that conclusion. Indeed, the argument fails to establish the conclusion.
That lady is morally sound, that is why her neighbours suspect her.

4.0   CONCLUSION

It has been observed that the strength of an argument is weakened not only by the nature of the structure of the language. The weakness in an argument can also be introduced by extraneous elements brought in. These elements are referred to as material fallacies.

SELF-ASSESSMENT EXERCISE

i.   List any five material fallacies.
ii.   Give two examples for each of fallacy of accident and fallacy of converse accident.
Answer: i) accident, complex question, the band wagon, appeals and irrelevant conclusions.
ii) Read 3.1 above for the answer.

5.0   SUMMARY

In this unit, you have learnt how the introduction of irrelevant material can weaken the logic of an argument. You have considered the fallacies of accident, converse accident, begging the question, the complex question, false causal relationship, attacking the straw man, the bandwagon and appeals. You have also noted examples of each of them.

6.0   TUTOR-MARKED ASSIGNMENT

i.   Discuss fallacies associated with the bandwagon and attacking the straw man.
ii.   Explain how fallacies of appeals weaken the logic of arguments.

7.0 REFERENCES/FURTHER READING

Copi, M. (1978). *Introduction to Logic*. London: Macmillan.

Ogbulogo, C. (2005). *Concepts in Semantics.* Lagos: Sam Iroanusi Publication.

Uduma, U.O. (1998). "Fallacies." In Omoregbe J. (Ed) *Introduction to Philosophy and Logic*, Lagos: Philosophy Department, University of Lagos.

UNIT 3   ELEMENTS OF LOGIC IN SEMANTICS

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1.0   INTRODUCTION

There is always a sense of logic in any language system. This places logic as a component of the meaning processes of natural language. This connection makes logic a point of interest in semantics. It should be noted, however that the emphasis of logic in semantics is on the relations involved in complex sentences, rather than with the abstract mathematical formulations. We shall explore in this unit the structure of the sentence and how this structure contributes to meaning.

Propositional logic is that aspect of logic studied in semantics. It is also referred to as propositional calculus or sentential calculus. The whole essence of logic is to examine the validity or correctness of arguments. We take an argument to be valid if both the premises and the conclusion are true. This means that the conclusion of a valid argument must derive from its premises. There are usually logical words or connectives establishing the link between premises and their conclusions. Examples of connectives are – *not, and, or, if … then,* and so on. We can also establish this link with qualifiers such as *all, some, many,* etc. It is possible for different words to occupy similar positions in presenting valid arguments. Expressions in arguments, which are not logical words, are described in symbols. The common symbols for sentences are *p, q* and *n* logical connectives are represented as follow:

~
V
≡

2.0   OBJECTIVES

At the end of this unit, you should be able to:
* establish the link between logic and semantics;
* identify simple logical connectives relevant to semantics;
* write simple propositions; and
* create complex propositions using logical connectives.

HOW TO STUDY THE UNIT

a. Read this unit as diligently as possible.
b. Find meaning of unfamiliar words in the unit using your dictionary.
c. As you read, put major points down in a piece of paper or jotter.
d. Do not go to the next section until you have fully understood the section you are reading now.
e. Do all the Self-Assessment exercises in the unit as honestly as you can. In some areas where it is not feasible to provide answers to Self-Assessment exercises, go to the relevant sections of the unit to derive the answers.

3.0   MAIN CONTENT

3.1   Simple Propositions

A proposition is simple if it has just one predicator. A proposition is that unit that makes up the subject matter of a statement, beliefs, feelings, attitudes, and so on of the hearer. A predicator is the verbal element in a proposition and it is represented in capital letters. The argument, which is usually the subject, is represented in small letters.
The usual practice is to place the subject before the predicator and other arguments following. Arguments are subjects and objects, which are also described as referring expressions. It is the usual practice to omit whatever is not a predicator or a referring expressing when writing in logical form. Thus, we can have the following example:

(i)   Ben cried _____ b CRY
(ii)   James advised Henrietta – j ADVISE h

It should be noted that only names and predicators are presented, leaving out tense markers, determiners and certain prepositions consider further the following example.

(iii) Ada was waiting for Tom _____ a look -for- t

3.2   Combing Simple Propositions

To combine simple propositions into more complex ones, we use logical connectives. As the simple propositions are joined, the complex propositions so formed are affected in some form – which can be conjunction or disjunction.

Conjunction

In English grammar, we establish conjunction with the word – and – represented by the symbol Ɛ. In logic, we can combine any number of individual well-formed structures as illustrated below.
(i)   Peter left the city p LEAVE c
(ii)   James painted pictures J paints P
Sentences (i) and (ii) can be conjoined to form (iii)

(iii)   Peter left the city and James painted pictures p LEAVE c Ɛ- j PAINT p

Disjunction

In disjunction, we present alternatives in propositions, using the word "or" which is represented with V (from the Latin word Vel – or). Just as we have shown in conjunction, we can derive complex structures by combining a number of simple propositions with the symbol *V*. Consider further the following examples.

(i)   Thomas paid
(ii)   Ben defaulted

From (i) and (ii), we have

Thomas paid or Ben defaulted Ɛ PAY V b default.

There is always the rule of the commutativity of conjunction and disjunction. This rule implied that the conjunction of two propositions is assured even in the opposite order. This reality is reflected in the following presentations.

q Ɛ- premise   pVq premise
p Ɛq conclusion   qVp conclusion

There are differences between conjunction and disjunction. For example, from the proposition:

(i)   Ben or Thomas came; cannot yield the conclusions:
(ii)   Ben came
(iii)   Thomas came.

There is apparent ambiguity involved. A straight forward way to resolve this ambiguity is to use the expression – either ... or
(iv)   Either Ben or Thomas came

3.3   Implication

It is possible to build compound propositions that are hypothetical, conditional or implicational with the phrase *if*... then. The first simple proposition coming between *if* ... and *then* is the antecedent (that is, the protasis, the implicant or the hypothesis) of the conditional while the second component after the word "then" is the consequent (the apodasis, the implicate or the thesis). It is logical to argue that if the antecedent in a conditional proposition is true, then the *consequent* is also true. Indeed, the truth of the antecedent implies the truth of the consequent. The relationship of if ... then is represented using a horseshoe (⊃) or an arrow (⟶) consider the following illustrations:

(i)   If children eat, then they will grow
        c   EAT ⊃   c will grow

Equivalence or Biconditional Proposition (if and only if)

The biconditional or equivalent proposition is expressed with a double arrow (⟹) or the three bar (≡). The expression "if and only if," also represented as (if) are placed between the antecedent and the consequent. However, neither the antecedent nor the consequent is asserted. The basic assumption is that if the antecedent is true, the consequent is also true. The converse is also true. Thus, if the antecedent is asserted, the consequent is also asserted. Witness these examples.

(i)   Jake will eat if and only if Alice will

This is represented as:

(ii)   Jake will eat ≡ Mary will

This means that either they will both eat or neither will.

3.4   **Negation or Denial** (Not) (~)

Operations of negation or denial do not produce combinations in propositions. Negations expand single proposition to produce new ones.

Thus, when a proposition that is true is denied, a false proposition emerges. Let us examine the following examples.

(i)   Dan is rich (positive)
(ii)   Dan is not rich (negative)

This is expressed, as ~ Dan is rich.

The most common way of expressing negation in English is to introduce the word not to the sentence, as shown above. The negation of a disjunction is expressed using neither... nor. Witness further (iii) and (iv).

(iii)   Either the boys or the girls will win the game. Negation:
(iv)   Neither the boys nor the girls will win the game

4.0   CONCLUSION

Symbols used in logic represent linguistic entities. That means that logical issues can be studied within semantics. It is always the case that what is not logical can always be misunderstood. We have featured aspect of logic that can be studied within a course of study in semantics. This branch of logic is propositional logic.

SELF-ASSESSMENT EXERCISE

i.   State the condition under which an argument is valid.
ii.   List five connectives used in propositional logic.

Read 1.0 above for the answer.

5.0   SUMMARY

You have learnt, in this unit, the link between logic and semantics, bearing in mind that logic examines the validity or correctness of arguments. To formalize the essence of logic, special symbols are used to represent simple and complex propositions. Simple propositions occur as simple statements while complex propositions are achieved with conjunction, disjunction, implication and negation.

6.0   TUTOR-MARKED ASSIGNMENT

(i)   Explain the nature of logic in semantic.
(ii)   Describe simple propositions and provide good examples.
(iii)   Discuss complex propositions.

7.0   REFERENCES/FURTHER READING

Copi, M. (1978). *Introduction to Logic*. London: Macmillan

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