UNIT 5: BASIC CATEGORICAL FALLACIES

UNIT STRUCTURE

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5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- discuss categorical fallacies.

5.2 INTRODUCTION

This unit basically deals with the categorical fallacies. By going through this unit, you will be able to discuss fallacies involved in categorical syllogism.

5.3 CATEGORICAL FALLACIES

In unit no. 4, we have already discussed the rules of syllogism. In this unit we will discuss exclusively the fallacies of categorical syllogism.

A syllogism becomes valid when it conforms to certain rules. In contrast to this, if any of the rule is violated in syllogism, we call it a fallacy.

According to the rule of syllogism, a valid standard form of categorical syllogism must contain exactly three terms. And the three terms must be used in the same sense in the argument. This rule asserts that in every categorical syllogism, the conclusion establishes a relation between two terms, minor (subject) and major term (predicate term). Besides, the conclusion in categorical syllogism asserts the relationship of the two terms-major term and minor term to the middle term. If a syllogism does not make

a relation of the two terms (major term and minor term) to the third term (middle term), the conclusion cannot be established. And finally, the syllogism will be invalid. Therefore, it is clear that every categorical syllogism must contain exactly three terms, and if more than three terms or less than three terms are involved, the syllogism becomes invalid and commits a fallacy that is called the fallacy of four terms.

As for instance: Plato is the teacher of Aristotle.
Socrates is the teacher of Plato.
Therefore, Socrates is the teacher of Aristotle.

In this syllogism, there are four terms namely: i) Plato 2. Teacher of Aristotle 3. Socrates 4. teacher of Plato. This syllogism is not valid because it contains four terms, so it violates the rule that is - each and every syllogism must contain only three terms or not less than three terms. Therefore, this syllogism commits a fallacy that is fallacy of four terms.

The second rule of categorical syllogism asserts that the middle term must be distributed at least once in the premises. And, if the middle term is not distributed in any of the premises, the syllogism becomes invalid and commits a fallacy that is the fallacy of undistributed middle.

As for instance: All cows are four-footed animals.
All cats are four-footed animals.
Therefore, All cats are cows.

This syllogism is invalid because the middle term is not distributed in any of the premises. Therefore, this syllogism commits a fallacy that is fallacy of undistributed middle.

The third rule says that a term which is distributed in the conclusion must be distributed in the premises. A syllogism is invalid, if a term is distributed in the conclusion but undistributed in the premises. There are two types of fallacy involved in syllogism by violating this rule. They are: Fallacy of illicit minor and fallacy of illicit major.

Fallacy of Illicit Minor: If a minor term is distributed in the conclusion but not distributed in the premises, we commit a fallacy, that is, fallacy of Illicit minor.

As for instance: No philosophers are artists.
All philosophers are thinkers. (Undistributed)
Therefore, All thinkers are artists.

This syllogism is invalid because the minor term (thinkers) is distributed in the conclusion without being distributed in the premise. Therefore, a fallacy is involved in this syllogism that is fallacy of illicit minor.

Fallacy of Illicit major: If a major term is undistributed in the conclusion without being distributed in the premise, the syllogism is invalid. This invalid syllogism is called fallacy of illicit major.

As for instance: All philosophers are logicians.
Some men are not philosophers.
Therefore, Some men are not logicians.

This example shows that this syllogism is invalid because the major term (logicians) is distributed in the conclusion but undistributed in the premise. Therefore, this syllogism commits a fallacy of illicit major.

According to the fourth rule of syllogism, a valid syllogism must not have two negative premises. A syllogism is invalid, if the conclusion is derived from two negative premises. In this context a fallacy is committed in a syllogism that is Fallacy of Exclusive premises.

As for instance: No fish are mammals.
Some cats are not fish.
Therefore, Some cats are not mammals.

This syllogism is invalid because the conclusion is derived from two negative premises. The logic behind this rule is that two negative propositions have nothing in common. There is no connector which can make a relation between two premises. The function of the middle term is to connect major and minor term, but the middle term cannot function its role, if the two premises of a syllogism are negative.

The 5th rule of syllogism holds the view that if one of the premises of a syllogism is negative, the conclusion is negative. But, if we draw the affirmative conclusion by violating the rule in a syllogism, we commit a fallacy of drawing affirmative conclusion from a negative premise.

As for instance: No potters are rich man.
Some engineers are potters.
Therefore, Some engineers are rich man.

This syllogism is invalid because the S class (minor term) is contained either wholly or partially in the P class (major term). But, the affirmative conclusion can be derived only if the S class is contained either wholly or partially in the M class, and the M class wholly in the P class. So, we can derive an affirmative conclusion, if both the premises are affirmative. But, if the S class is contained either wholly or partially in the M class, and the M class is excluded (separated) either wholly or partially from the P class, an affirmative conclusion cannot be drawn from negative premises. On the other hand, a negative conclusion asserts that the S class is excluded (separated) either wholly or partially from the P class. But, if both the premises are affirmative, both the terms assert class inclusion rather than class exclusion. Thus, a negative conclusion cannot be followed from negative premises.

According to the sixth (6^{th}) rule of categorical syllogism, no particular conclusion can be drawn from two universal premises. This rule is not necessary for traditional or Aristotelian account of categorical propositions because it does not pay attention to the problem of existential import. Rather, it can be said that Boolean interpretation of categorical propositions asserts the existence of something. If the premises of an argument do not assert the existence of something at all, the conclusion will be unwarranted and commits a fallacy that is existential fallacy.

As for instance: All mammals are animals.
All lions are mammals.
Therefore, Some lions are animals.

This syllogism is invalid because it commits the existential fallacy from the Boolean standpoint. The fallacy is committed because the conclusion asserts that lions exist. Universal premises are not recognized to be possessed of existential import from the Boolean standpoint.



CHECK YOUR PROGRESS

Q.1: How does fallacy involve in a syllogism? (Answer in 20 words)

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Q.2: What are the two terms involved in a categorical syllogism?

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Q.3: If a categorical syllogism contains four terms, what type of fallacy occurs?

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Q.4: What is the second rule of categorical syllogism?

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Q.5: What is the fallacy of illicit major?

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Q.6: What is the fallacy of illicit minor?

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Q.7: What is the fallacy of Exclusive premises?

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Q.8: What is sixth rule of categorical syllogism?

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Q.9: Write the name of the logician, who has given existential fallacy.

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Q.10: What is the fallacy of drawing affirmative conclusion from a negative premise?

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5.4 LET US SUM UP

- A syllogism becomes valid when it conforms to certain rules but in contrast to this, if any of the rules is violated in syllogism, we call it a fallacy.
- According to the rule of syllogism, a valid standard form of categorical syllogism must contain exactly three terms.
- Every categorical syllogism must contain three terms, and if more than three terms are involved, the syllogism becomes invalid and commits a fallacy that is called the fallacy of four terms.
- If the middle term is not distributed in any of the premises, the syllogism becomes invalid and commits a fallacy that is the fallacy of undistributed middle.
- If a minor term is distributed in the conclusion but not distributed in the premises, we commit a fallacy, that is, fallacy of Illicit major.
- If a major term is distributed in the conclusion but not distributed in the premises, we commit a fallacy, that is, fallacy of Illicit major.
- A syllogism is invalid, if the conclusion is derived from two negative premises and in this context a fallacy is committed in a syllogism that is Fallacy of Exclusive premises.
- If the premises of an argument do not assert the existence of something at all, the conclusion will be unwarranted and commits a fallacy that is existential fallacy.

- If we draw the affirmative conclusion by violating the rule in a syllogism, i.e., if one of the premises of a syllogism is negative, the conclusion is negative and we commit a fallacy of drawing affirmative conclusion from a negative premise.
- The sixth (6^{th}) rule of categorical syllogism, i.e., no particular conclusion can be drawn from two universal premises is not necessary for traditional or Aristotelian account of categorical propositions because it does not pay attention to the problem of existential import.
- Universal premises are not recognized to be possessed of existential import from the Boolean standpoint.



5.5 FURTHER READING

1) Copi, M. Irving, &Cohen, Carl, & Jetli, Priyedarshi Jetli & Prabhakar, M. (2006); *Introduction to Logic*; Dorling Kindersley (India) Pvt. Ltd.
2) Hurley, J. Patrick (2007); *Introduction to Logic*; Wadsworth.
3) Hausman, A. & Kahane, H. & Tidman, P. (2007); *Logic and Philosophy*. Wadsworth.
4) Jain, Krishna. (1998). *A Textbook of Logic*. D. K. Printworld (P) World.



5.6 ANSWER TO CHECK YOUR PROGRESS

Ans. to Q. No. 1: A syllogism becomes valid when it conforms to certain rules. In contrast to this, if any of the rules is violated in syllogism, we call it a fallacy.

Ans. to Q. No. 2: Minor term and major term

Ans. to Q. No. 3: Fallacy of four terms.

Ans. to Q. No. 4: The second rule of categorical syllogism asserts that the middle term must be distributed at least once in the premises.

Ans. to Q. No. 5: If a major term is distributed in the conclusion but not distributed in the premises, we commit a fallacy, that is, fallacy of Illicit major.

Ans. to Q. No. 6: If a minor term is distributed in the conclusion but not distributed in the premises, we commit a fallacy, that is, fallacy of Illicit minor.

Ans. to Q. No. 7: A syllogism is invalid, if the conclusion is derived from two negative premises and in this context a fallacy is committed in a syllogism that is Fallacy of Exclusive premises.

Ans. to Q. No. 8: According to the sixth (6^{th}) rule of categorical syllogism, no particular conclusion can be drawn from two universal premises.

Ans. to Q. No. 9: Boole

Ans. to Q. No. 10: If we draw the affirmative conclusion by violating the rule, i.e., 'if one of the premises of a syllogism is negative, the conclusion is negative in a syllogism', we commit a fallacy of drawing affirmative conclusion from a negative premise.



5.7 MODEL QUESTIONS

A) Very Short Questions:

Q.1: When does a syllogism become valid?

Q.2: What are the names of subject term and predicate term in a syllogism?

Q.3: Give an example of fallacy of four terms.

Q.5: Give an example of fallacy of illicit major.

Q.6: Give an example of fallacy of illicit minor.

B) Short questions: (Answer each question in about 150 words)

Q.1: Explain briefly fallacy of four terms.

Q.2: Explain briefly second rule of the categorical syllogism.

Q.3: What is fallacy of undistributed middle? Give suitable examples.

Q.4: Explain briefly the fallacy of illicit major.

Q.5: What is the fourth rule of categorical syllogism? Explain briefly.

C) Short Notes on: (Answer each question in about 150 words)

Q.1: Fallacy of illicit minor

Q.2: Existential Fallacy

Q.3: Sixth rule of categorical syllogism

D) Distinguish between: (Answer each question in about 150 words)

Q.1: Fallacy of illicit major and fallacy of illicit major

Q.2: third and fourth rule of categorical syllogism.

E) Long Questions: (Answer each question in about 300-500 words)

Q.1: What is the first rule of categorical syllogism? What fallacy may occur in violation of this rule? Explain with suitable example.

Q.2: Explain the fallacies of illicit major and illicit minor.

Q.3: Explain broadly what fallacies may lead in violation of fifth and sixth rules?

Q.4: What is the sixth rule of categorical syllogism? Write the Boolean interpretation in this regard.

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