
UNIT 3 THE DILEMMA AND FALLACIES

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3.0 OBJECTIVES

In this unit you are expected to understand

- dilemma which is not logically sound or acceptable .
- fallacies which would educate you on the pitfalls to be avoided in argument.
- why you are prone to err.
- your usual mistakes in argument.

3.1 INTRODUCTION

In the previous units, we learnt a good deal about categorical proposition, which is also known as unconditional proposition. In contrast to unconditional proposition, there is another class of proposition known as conditional proposition. In our study of symbolic logic, which will occupy us in the next units, we are required to make use of conditional proposition from a different perspective (within the framework of symbolic logic a conditional proposition is called compound proposition). Presently, we use conditional proposition to understand what the dilemma is.

There are two kinds of conditional propositions; hypothetical and disjunctive (Some authors like Cohen and Nagel use 'alternative' instead of 'disjunctive'. In the previous block also this distinction was made. However, here afterwards 'alternative' is not used. Instead, only 'disjunctive' is used.). Let us become familiar with the structure of these propositions.

1. If the economy of nation stabilizes, then inflation will dip.

A proposition, which has this particular structure, is called hypothetical. All hypothetical propositions consist of words 'if' and 'then'. Statement, which follows 'if' is called antecedent and statement, which follows 'then', is called consequent. In the given example antecedent and consequent are as follows.

economy of nation stabilizes. – antecedent

inflation will dip. – consequent

When hypothetical proposition forms a part of an argument, it is stipulated that one of the two restrictions has to be followed; in second premise antecedent must be affirmed or consequent must be denied. Affirmation of antecedent leads to affirmation of consequent and denial of consequent leads to denial of antecedent. Denial of antecedent or affirmation of consequent anywhere else excepting in the conclusion is fallacious.

A disjunctive proposition does not have a fixed formation. It is identified with the help of words 'either' and 'or'. It is not even necessary that both of them should be present. It is sufficient if 'or' alone is present. Consider these two examples.

2. A philosopher is either generous or a miser.

3. Education is useless or costly.

The only difference between 2nd and 3rd examples is that in the former, 'either' is explicitly stated, whereas in the latter, it is not. To avoid further confusion, let us stick to the former use. Generally, we deal with proposition, which has two components. A disjunctive proposition may have more than two components depending upon the type of 'or'. There are two types of 'or'; inclusive and exclusive. In 2nd example or is exclusive because it excludes third possibility, viz., being both generous and miser. Obviously, one who is generous cannot be a miser and vice versa. However, in the third example, 'or' is of inclusive type because education can be costly and useless in which case, the sentence is further extended as follows

3a Education is useless or costly or both.

Underlined segment of 3a refers to the extended part of 3. Since 'or' can be inclusive or exclusive, when it forms a part of argument, there should not be any confusion. Therefore, the rule stipulates that one of the components (they are called disjuncts) must be denied so that without any ambiguity the remaining disjunct can be affirmed.

One more aspect remains to be mentioned. Aristotle recognized one particular type of proposition as distinct. 'Socrates is mortal' is of this type. In this proposition, the subject does not lend itself to quantitative analysis, i.e., denotation does not make any sense, when proper name becomes subject of a proposition. In spite of this limitation, Aristotle regarded it as universal. Such propositions are aptly called singular propositions.

3.2 THE STRUCTURE AND VALUE

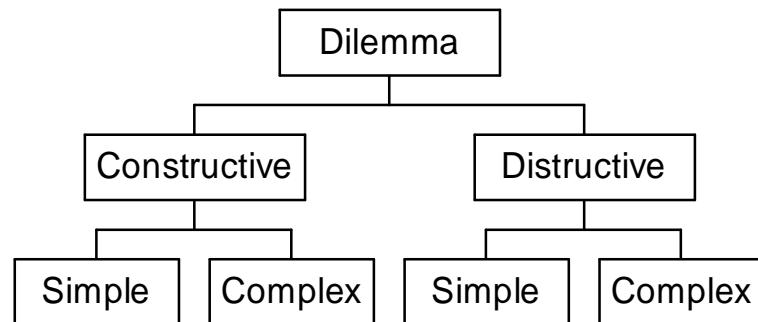
Now we are in a position to understand the structure of dilemma. The dilemma consists of three propositions of which two constitute premises and third one is the conclusion. The premises do not have any specific order. But the composition is fixed. One of the premises is a conjunction of two hypothetical propositions and the other one is disjunctive. The conclusion is either disjunctive or simple. In the previous section, we learnt that a hypothetical proposition consists of two parts; antecedent and consequent. Since the dilemma consists of two hypothetical propositions

conjoined by the word 'and', it is possible that two propositions are found in place of antecedents and two propositions are found in place of consequents. But it is not necessary that it should be so. It is likely that both propositions have a common consequent or common antecedent. If such consequent or antecedent becomes conclusion, then, conclusion is a simple proposition.

Let us consider its value before we proceed further with our analysis. The dilemma, in the strict sense of the word validity, is neither valid nor invalid. This is so because in this particular pattern there is no way of fixing the truth-value of the premises. The dilemma neither contributes to the growth of knowledge nor does it help in testing what is in need of testing. Its significance is only restricted to rhetoric. The use of dilemma is an example of misuse or abuse of logic. Such a situation arises when a person, who is ignorant of logic, is confronted by an unscrupulous logician. It is most unlikely that the dilemma was ever seriously considered by any professional logician. It, then, means that the dilemma has only negative significance, i.e., to know how not to argue.

3.3 KINDS OF THE DILEMMA

The kinds of dilemma can be represented in the form of a table.



1. In a complex constructive dilemma (CCD) the antecedents and consequents vary. In second premise the antecedents are affirmed disjunctively and in the conclusion the consequents are affirmed in similar fashion. This description can be represented in this way:

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow s)$$

$$p_2: p \vee r$$

$$q: \therefore q \vee s$$

2. In a simple constructive dilemma (SCD), both hypothetical propositions have common consequents, though antecedents differ. These antecedents are affirmed disjunctively in second premise and consequent is affirmed in the conclusion. Since there is only one consequent the conclusion is a simple proposition. The structure of this kind can be represented as follows

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow q)$$

$$p_2: p \vee r$$

$$q: q$$

3. The structure of complex destructive dilemma (CDD) differs slightly from the first kind. The difference is that the disjunctive propositions in premise and conclusion negate disjunctively the components of respective propositions.

However, the structure of the other premise remains the same. The form of CDD is mentioned below:

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow s)$$

$$p_2: \# q \vee \# s$$

$$q: \# p \vee \# r$$

4. The structure of simple destructive dilemma (SDD) differs slightly from the second kind. In this type, also the conclusion is a simple proposition, but negative. The second premise has structure similar to that of p_2 of CDD. The form of SDD is as follows:

$$p_1: (p \Rightarrow q) \wedge (p \Rightarrow r)$$

$$p_2: \# q \vee \# r$$

$$q: \# p$$

Now, we can make a list of common features of different kinds of dilemma.

Dilemma	Common Features
1. Constructive	Different antecedents
2. Destructive	Different consequents
3. Complex	Disjunctive conclusion
4. Simple	Simple Conclusion

We will consider examples for four kinds, which can be used to illustrate these three methods.

- i) Complex Constructive Dilemma (CCD):

p

p_1 : **If** (any government wages war to acquire wealth), **then** (it becomes a
 q r
 rogue government) and **if** (it wages war to expand its territory), **then** (it
 s
 becomes colonial).

p r

p_2 : (Any government wages war either to acquire wealth) **or** (to expand its
 territory) q s

q : It (becomes a rogue government) **or** (colonial).

Formula: $(p \Rightarrow q) \wedge (r \Rightarrow s)$

$$p \vee r$$

$$q \vee s$$

- ii). Simple Constructive Dilemma (SCD):

p

q

p_1 : **If** (taxes are reduced to garner votes), **then** (the government loses
 revenue)

r

and **if**(taxes are reduced in order to simplify taxation), **then** (the

q
government loses revenue).

p

r

p_2 : (Taxes are reduced either to garner votes) **or** (to simplify taxation)

q: (The government loses its revenue).

q

Formula: $(p \Rightarrow q) \wedge (r \Rightarrow q)$

p \vee r

q

iii) Complex Destructive Dilemma (CDD):

p

q

p_1 : **If** (the nation wages war), **then** (there will be no problem of
unemployment) and **if** (the nation does not revise her industrial policy),
then (it will lead to revolution).

$\neg q$

$\neg s$

p_2 : The (problem of unemployment remains unsolved) **or** (there will not be any revolution).

$\neg p$

$\neg r$

q: (The nation does not wage war) **or** (the nation will revise her industrial policy).

Formula: $p_1: (p \Rightarrow q) \wedge (r \Rightarrow s)$

$p_2: \neg q \vee \neg s$

q: $\neg p \vee \neg r$

iv) Simple Destructive Dilemma (SDD):

p

q

p_1 : **If** (you are in the habit of getting up early), **then** (you are a
theist) and (**If** (you are in the habit of getting up early), **then** (you are a
labourer)

r

$\neg q$

$\neg r$

p_2 : (you are not a theist) or (you are not a labourer)

$\neg p$

q: (you are not in the habit of getting up early)

Formula: $p_1: (p \Rightarrow q) \wedge (p \Rightarrow r)$

$p_2: \neg q \vee \neg r$

q: $\neg p$

3.4 AVOIDING DILEMMA

Use of dilemma is restricted to some situations. When neither unconditional affirmation of antecedent nor unconditional denial of consequents is possible, logician may use the dilemma. It indicates ignorance. When we face dilemma we only try to avoid, but not to negate. There are three different ways in which we can try to avoid dilemma. All these ways only reflect escapist tendency. Therefore, in logical sense, they do not carry much weight.

1. Escaping between the horns of dilemma: Two consequents mentioned may be incomplete. If it is possible to show that they are incomplete, we can avoid facing dilemma. This is what known as 'escaping between the horns of dilemma'. It should be noted that even when third consequent is suggested it does not mean that this new consequent is actually true. In other words, the new consequent also is hypothetical.
2. Taking the dilemma by horns: In this method of avoiding dilemma, attempts are made to contradict the hypothetical propositions, which are conjoined. A hypothetical proposition is contradicted when antecedent and negation of consequent are accepted. However, in this case this particular acceptance is missing. Instead, third component is offered to shield the antecedent after denying the consequent. Therefore contradiction is missing.
3. Rebuttal of dilemma appears to be its contradiction. But, in reality, it is not. In all these cases, the dilemma becomes a potent weapon to mislead the opponent in debate.

The first way of avoiding the dilemma, i.e., escaping between the horns of dilemma can be illustrated using 1 (CCD). It is possible to argue that, when the government wages war, the motive is neither to acquire wealth nor to expand its territory in which case, the government is neither rouge nor colonial. The motive may be to spread its official religion or personal vendetta or it may be to protect its interests. If the last one is the motive, then, it becomes difficult to find fault with such government. Any of the proposed alternatives to disjuncts may be false or all of them may be false. There is no way of confirming the same. The reader can select remaining examples to illustrate this method. Likewise, consider fourth argument to illustrate second method. I may concede that a person gets up early only because he wants to maintain health. So the purpose is not to worship God. Nor is he a labourer. Again, this is also an assumption.

Rebutting of dilemma requires a different type of example. Consider this one:

- i). p q
- p_1 : If (teacher is a disciplinarian), then (he is unpopular among students) and
- $\neg p$ $\neg r$
- if (he is not a disciplinarian), then (his bosses do not like him).
- p $\neg p$
- p_2 : (Teacher is a disciplinarian) or (he is not a disciplinarian).
- q : (Teacher is unpopular among students) or (his bosses do not like him).
- q v $\neg r$

A witty teacher may respond in this way.

ii). $\neg p$ $\neg q$

p_1 : if (teacher is not a disciplinarian), then (he is popular among students) and

p r

if (he is a disciplinarian) then (his bosses will like him.)

p $\neg p$

p_2 : (Teacher is not a disciplinarian) or (he is a disciplinarian)

q : (Teacher is popular among students) or (his bosses will like him)

$\neg q$ r

Let us represent i & ii symbolically.

i) $p_1: (p \Rightarrow q) \wedge (\neg p \Rightarrow r)$ ii) $(\neg p \Rightarrow \neg q) \wedge (p \Rightarrow r)$

$p_2: p \vee \neg p$

$\neg p \vee p$

$q \vee \neg q$

$\neg q \vee r$

Now compare $(q \vee \neg q)$ and $(\neg q \vee r)$. Only a student of logic will realize that these two are not contradictories (you will learn about it in forthcoming units). Hence there is really no rebuttal.

Further, the dilemma, which an individual faces in day-to-day life, is very different; for example, moral dilemma. This has nothing to do with the kind of dilemma, which we have discussed so far.

Check Your Progress I

Note: a) Use the space provided for your answer.

b) Check your answers with those provided at the end of the unit.

1) How did the dilemma become popular? Why do we say that it is not an inference?

.....

2) How many kinds of dilemma are there? What exactly can we achieve if we use any kind of dilemma?

.....

3) Explain the structure of dilemma.

.....

3.5 FALLACIES

Arguments are either valid or invalid. All valid arguments are good and invalid arguments are bad. A bad argument is also fallacious. Therefore, in the strict sense of the term, whatever causes an invalid argument also causes a fallacy. There are two ways in which an argument becomes fallacious; violation of any rule of inference results in fallacy. Secondly, In terms of truth-value of propositions, fallacy can also be caused by deducing false conclusion from true premise or premises. These two possibilities do not always overlap. Consider this example:

Some philosophers are not politicians.

Medha Patkar is not a philosopher.

∴ Medha Patkar is not a politician.

Although we have deduced a true conclusion from true premises, the argument is invalid and therefore, fallacious. A better way of interpreting fallacy is through integration of two ways of committing a fallacy. Accordingly, a fallacy is committed if we deduce a conclusion from given set of premises when it cannot be deduced. Copi has summed up this particular description in his analysis in his work *Introduction to Logic*, (9th Ed., Prentice Hall India, New Delhi, 1995, p.114). ‘An argument whose premises do not support its conclusion, is one whose conclusion ‘could’ be false (or true) even if all its premises are true’. He goes a step further and defines ‘fallacy as a type of argument that may seem to be correct, but that proves on examination, not to be so’. This particular type of definition is necessary, he argues, in order to distinguish persuasive arguments, which have only psychological force but not logical force.

Fallacies are many because there are many ways in which we may go wrong. While arguing we make mistakes sometimes consciously and sometimes inadvertently. These several fallacies are classified as follows (Edwards, Paul, ed. *Encyclopedia of Philosophy*. Vol 4. Macmillan and Free Press, 1972)); formal, informal, inductive and philosophical. First two types are deductive in nature and they are fallacious in the strict sense of the word. On the other hand, inductive fallacies can be regarded so only in a loose sense. This way of distinguishing is necessary because first two types of fallacies are committed when certain rules are violated and we are in a position to know clearly what those are. On the contrary, in case of inductive fallacy, there is no rule violated, or, at least, we are not in a position to decide with certainty whether or not any rule is violated. This confusion arises because in the first place, we are not sure whether there is anything like inductive rule just as there is something like deductive rule or rules. Yet, we are in a position to conclude, whether intuitively or not, that certain inductive arguments are acceptable (if not valid) and others are not acceptable (if not invalid). So, in a loose sense, we will say that inductive arguments, which are unacceptable, are fallacious. Philosophical fallacies are, in a sense, of a special variety, which arise due to very different reasons. The last type is not considered here.

3.6 FORMAL FALLACIES

Some formal fallacies deserve to be discussed under relevant units; for example, syllogistic fallacies. So it is apt to discuss them later. Fallacy of conversion was mentioned earlier. So it is also left out. Therefore we shall consider the remaining fallacies. In the previous section, we learnt about the structure of hypothetical proposition. It consists of antecedent and consequent. When it becomes a part of

any argument or pseudo-argument, like dilemma, the application of rule becomes relevant. The rule stipulates that in second premise either antecedent must be affirmed or consequent must be denied. Consider the form of such arguments.

$$\begin{array}{ll}
 1) & \begin{array}{l} p_1: p \Rightarrow q \\ p_2: p \\ \hline q_1: q \end{array} & 2) & \begin{array}{l} p_1: p \Rightarrow q \\ p_2: \neg q \\ \hline q_2: \neg p \end{array}
 \end{array}$$

1) confirms that antecedent (p) is affirmed in second premise (p2) through which consequent (q1) is affirmed in conclusion. 2) shows that consequent (q) is denied in second premise (p2) through which antecedent (p) is denied in conclusion (q2). 1 is valid and the mood is known as *modus ponendo ponens* which means the mood in which ‘something is affirmed (q) through affirming something else (p). If ‘p’ is denied, instead of being affirmed, then the rule is violated and the argument commits the ‘fallacy of denying the antecedent’.

(2) is another valid mood. It is called ‘*modus tollendo tollens*’. It means the mood in which something is denied (p) in the conclusion through something else being denied (q) in second premise. If ‘q’ is affirmed instead of being denied, then the argument commits the ‘fallacy of affirming the consequent’. The form of invalid arguments is as follows.

$$\begin{array}{ll}
 3) & \begin{array}{l} p_1: p \Rightarrow q \\ p_2: \neg p \\ \hline q_1: \neg q \end{array} & 4) & \begin{array}{l} p_1: p \Rightarrow q \\ p_2: q \\ \hline q_1: p \end{array}
 \end{array}$$

The reader is advised to substitute statements for symbols.

Likewise, when disjunctive argument is involved the rules stipulate that one of the components must be denied in second premise through which the remaining component is affirmed in the conclusion. Consider this form:

$$\begin{array}{ll}
 \begin{array}{l} p \vee q \\ \neg q \\ \hline p \end{array} & \text{or} & \begin{array}{l} p \vee q \\ \neg p \\ \hline q \end{array}
 \end{array}$$

There is no structural difference between these two examples. This is a valid mood, which is called *modus tollendo ponens* (mood in which one is denied and through which another is affirmed). When this rule is violated, the mood of the argument is *ponendo ponens* or *ponendo tollens*. Both are fallacious. Consider these forms.

$$\begin{array}{ll}
 \begin{array}{l} p \vee q \\ p \\ \hline q \end{array} & \text{or} & \begin{array}{l} p \vee q \\ p \\ \hline \neg q \end{array}
 \end{array}$$

It may be noted that *ponendo ponens* is valid only when hypothetical proposition is involved in the argument.

3.7 INFORMAL FALLACIES

We shall concentrate now on different class of fallacies. These are also called non-

logical fallacies because there is no violation of any rule of inference as such. However, they are fallacious because in such arguments premises and conclusions are mutually irrelevant. Therefore they can also be called fallacies of irrelevance. Fallacy can also result due to ambiguity in language. There are in all sixteen such fallacies. A brief reference will be made to them.

1. *Petitio Principii* (Begging the question): In philosophical study, this fallacy is very common. It is committed when in our attempt to prove we assume what has to be proved. It means that something is proved on the basis of itself. We start from a position and end our argument by returning to the very same position. Hence *petitio principii* is also known as arguing in circle. An attempt to justify induction on the basis of some inductive principle is a classic example of this fallacy.
2. Accident: Fallacy of accident has two forms: direct fallacy and its converse. In both the cases, fallacy results due to inappropriate use of generalisation. So in order to distinguish former from the latter, the former can be qualified as direct accident. These fallacies are committed when the difference between normal and special circumstances is ignored. Since it can be ignored in two ways, we have two types of fallacies. When any norm, which applies to generalization is made applicable to any special case ignoring the difference between them, then fallacy of direct accident is committed. For example, murders are to be hanged, so all soldiers must be hanged.
3. Converse fallacy of accident: When the norm, which applies to a special case, is blindly extended to general circumstances, the converse fallacy is committed. An enlightening example is the dialogue between Socrates and Polemarchus. When Polemarchus argues that justice consists in repaying debt, Socrates promptly challenges him by demanding to know whether justice consists in returning arms, borrowed from my friend, to him when I know that he has passed from sober state to disturbed state. If the answer had been 'yes' then fallacy of direct accident would have been committed. If you argue in reverse order then converse fallacy is committed.
4. Argument *ad verecundiam*: This type of fallacy (and also next five types) is committed when we choose irrelevant premise. It is irrelevant because the premise really does not provide any support to the conclusion. This fallacy is committed when we try to get support from any person (usually famous and highly respected). Surely, from the point of view of logic, what a person says or does not say is irrelevant, more so when the person who is quoted is not an expert. This particular fallacy, in most of the cases, describes those who indulge in advertisement because in most of the advertisements the models who bat for the advertising companies know nothing about the products. Yet they speak with authority, which is endorsed by others.
5. Argument *ad Populum*: This fallacy is committed when a speech appeals to emotion and stirs up love or hatred. Generally, political speeches fall under this category. A classic example of this fallacy finds place in Shakespeare's Julius Caser, when Mark Antony instigates the crowd to take revenge on Caesar's killing. It should be noted that in such case the appeal is striking and hence it is noticeable easily.
6. Argument *ad Misericordiam*: This is an appeal to pity. From Plato's dialogues we understand that in ancient Greece, the criminals followed this method to escape punishment. It is doubtful whether this was followed by one who was not guilty.

7. Argument *ad Baculum*: Here, of course, there is no appeal but threat. Again, *baculum* is one method followed by those who are after power or who, supported by political authorities, try to enforce their ideology, whether religious or social. Threat may be to life or property or position. *Baculum* has all the features of totalitarian mindset and hence undemocratic.
8. Argument *ad Ignorantiam*: This is a commonplace fallacy committed in academic circles. *Udayana* a *vaisheshika*, argued that God exists because reason has failed to prove that God does not exist. In other words, this fallacy is committed when I argue that my thesis is established when its antithesis could not be established by my opponent.
9. Argument *ad Hominem*: Arguments directed against the personality or character of the opponent, commit this fallacy. Again, this sort of fallacy is rare in academic circles, largely restricted to political circles. Generally, rivalry or animosity is behind committing this fallacy. Man is not always rational, no matter how deeply he is philosophized. Knowing fully well that it is unphilosophical to argue beside the point, we do so, generally, in a fit of rage.
10. *Ignoratio Elenchi*: There is a subtle difference between fallacies from 4 to 9 and this particular one. While in the case of former fallacies, the chosen premises are irrelevant, in the present case we get some other conclusion than the expected or intended one. In other words, instead of proving what is intended, we prove something different. It is not the case of missing the bus, but it is a case of the bus missing the route. It is a case of reasoning going 'astray'.
11. Complex question: Generally, complex question figures prominently in legal field. Complex question is an example of clever way of manipulation in order to checkmate the accused in particular or opponent in general. The question is framed in such a way that it admits only two answers and no matter which answer is chosen, the accused walks into the trap. The question is such that answers are hidden in it and hence it is impossible for anyone to construe any other answer to the question.

3.8 FALLACIES DUE TO AMBIGUITY

Ambiguity is of three types, use of ambiguous word, ambiguous structure of sentence and differing accent.

12. Equivocation is due to ambiguous words. 'Good' is one such ambiguous word. Consider this example: 'Rama is good'. 'Rama is a teacher'. Therefore, Rama must be a good teacher. It is one thing to be a good human being and something different to be a good teacher. This difference in the meaning of the word 'good' is obliterated here. Hence, fallacy of equivocation arises.
13. Amphiboly is due to the manner in which the words are combined and the hidden meaning which such combination suggests. The way in which Socrates understood what the oracle at Delphi said and the way in which others understood the same account for amphiboly. When the Oracle said that Socrates is the wisest man in Greece, Socrates took it to mean very differently.
14. Accent also can lead to fallacy. The premise emphasises one aspect while the conclusion emphasis another aspect. For example, when Jesus in his sermon, advises his disciples to 'love their neighbour' the advice could have been misconstrued by placing emphasis on the word 'your' while, in reality, Jesus emphasised the word 'neighbour'.

15. Composition: First fallacy consists in proceeding from parts to whole whereas the second consists in proceeding from whole to parts. Generally, these fallacies are committed when the attributes are under scrutiny. In the history of western philosophy we have famous example of J.S. Mill who consciously committed the fallacy of composition. He said as follows:

Every man desires his own happiness

∴ All men desire the happiness of all.

16. Division: Composition and division are reciprocal fallacies. If the above-mentioned example is reversed with a little modification, then it becomes division.

No men desire the happiness of all.

No man desires his own happiness.

It is obvious that fallacies of ambiguity are due to wrong interpretation or understanding, whereas logical fallacies are due to wrong reasoning. Interpretation and reasoning are different.

3.9 INDUCTIVE FALLACY

False cause: This fallacy consists in regarding an event as a cause of given effect, when, in reality, it is not the cause. But how are we to know that the supposed cause is not the cause at all? The only way is to wait for the occurrence of effect, which does not follow the supposed cause. But suppose that it did not happen. Then there is no way of deciding against the supposed link between cause and effect. For example, a historian may claim that the cause of India becoming independent is Second World War. There is no way in which the sequence of events can be repeated in future if this claim has to be tested. Hence, proof in the strict sense of geometrical proof is impossible in induction.

Secondly, there is no rule in inductive logic. Hence, there is no question of fallacy at all. With respect to inductive arguments, it can only be remarked that whatever opposes an acceptable inductive argument is fallacious. Mere common sense or experience is enough to suggest what is acceptable. Hence, without demanding logical proof, it is possible to decide what is acceptable and hence what is fallacious.

One advantage of knowing what fallacies are, whether in strict sense or in loose sense, is that if we know what is wrong, then we can correct mistakes or we may refrain from making them. And this is the way knowledge grows.

Check Your Progress II

Note: a) Use the space provided for your answer.

b) Check your answers with those provided at the end of the unit.

- 1) Distinguish between different kinds of fallacies.

.....

- 2) Illustrate the fallacies of denying antecedents and affirming the consequent.

.....

3) How many fallacies can occur in a politician's speech? Illustrate them.

.....

3.10 LET US SUM UP

The dilemma is not an inference. Though it does not have any significance in logic, it is not possible to use it without any knowledge of logic. At least two propositions must be conditional (or compound). There are four kinds, complex constructive, and complex destructive on the one hand; simple constructive and simple destructive on the other. The dilemma is complex if the conclusion is conditional, otherwise simple. It is constructive when propositions affirm; otherwise destructive. We can only escape from or avoid dilemma. But it is not possible to disprove. Hence, it has use only in rhetoric. Knowledge does not owe anything to the dilemma.

Fallacies are of several types because mistakes are of several types. There are deductive fallacies, which are so in the strict sense. There are also fallacies in loose sense like inductive fallacies. Fallacies in formal and informal sense are due to mistakes we make in reasoning and interpretation. There are in all sixteen formal and informal fallacies and one inductive fallacy. There are two philosophical fallacies, which are different from logical. One advantage of knowing what fallacies are is that it helps in correcting the mistake or in avoiding the same.

3.11 KEY WORDS

When we are engaged in philosophical dispute, sometimes we attempt at solving the dispute without grasping correctly the nature of problem. This type of error is called philosophical fallacy.

3.12 FURTHER READINGS AND REFERENCES

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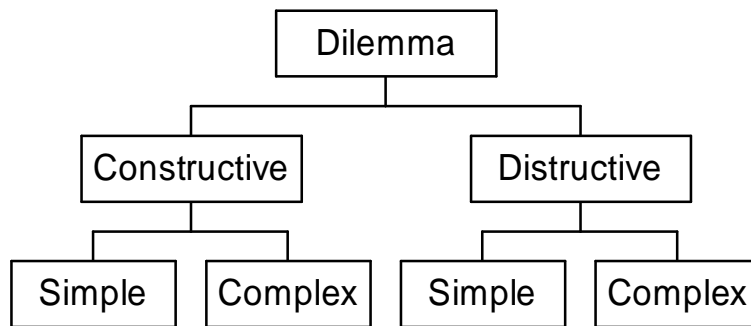
3.13 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress I

1. The use of dilemma is an example of misuse or abuse of logic. Such a situation arises when a person, who is ignorant of logic, is confronted by an unscrupulous logician. It is most unlikely that the dilemma was seriously considered by any committed to logic. The dilemma, in the strict sense of the word validity, is neither valid nor invalid. This is so because in this particular pattern there is no way of fixing the truth-value of the premises. The dilemma neither contributes to the growth of knowledge nor does it help in testing what is in need of testing.

Its significance is only restricted to rhetoric. It is most unlikely that the dilemma was ever seriously considered by any professional logician.

2. The kinds of dilemma can be represented in the form of a table.



- a) In a complex constructive dilemma (CCD) the antecedents and consequents vary. In second premise the antecedents are affirmed disjunctively and in the conclusion the consequents are affirmed in similar fashion. This description can be represented in this way:

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow s)$$

$$p_2: p \vee r$$

$$q: \therefore q \vee s$$

- b) In a simple constructive dilemma (SCD), both hypothetical propositions have common consequents, though antecedents differ. These antecedents are affirmed disjunctively in second premise and consequent is affirmed in the conclusion. Since there is only one consequent the conclusion is a simple proposition. The structure of this kind can be represented as follows.

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow q)$$

$$p_2: p \vee r$$

$$q: q$$

- c) The structure of complex destructive dilemma (CDD) differs slightly from the first kind. The difference is that the disjunctive propositions in premise and conclusion negate disjunctively the components of respective prepositions. However, the structure of the other premise remains the same. The form of CDD is mentioned below:

$$p_1: (p \Rightarrow q) \wedge (r \Rightarrow s)$$

$$p_2: \neg q \vee \neg s$$

$$q: \neg p \vee \neg r$$

- d) The structure of simple destructive dilemma (SDD) differs slightly from the second kind. In this type, also the conclusion is a simple proposition, but negative. The second premise has structure similar to that of p_2 of CDD. The form of SDD is as follows:

$$p_1: (p \Rightarrow q) \wedge (p \Rightarrow r)$$

$$p_2: \neg q \vee \neg r$$

$$q: \# p$$

Now, we can make a list of common features of different kinds of dilemma.

Dilemma	Common Features
a) Constructive	Different antecedents
b) Destructive	Different consequents
c) Complex	Disjunctive conclusion
d) Simple	Simple Conclusion

Use of any type of dilemma only helps us to evade a tricky situation. That is all what we can achieve with the help of dilemma.

- The dilemma consists of three propositions of which two constitute premises and third one is the conclusion. The premises do not have any specific order. But the composition is fixed. One of the premises is a conjunction of two hypothetical propositions and the other one is disjunctive. The conclusion is either disjunctive or simple.

Check Your Progress II

- Fallacies are many because there are many ways in which we may go wrong. While arguing we make mistakes sometimes consciously and sometimes inadvertently. These several fallacies can be classified as follows; formal, informal, inductive and philosophical. First two types are deductive in nature and they are fallacious in the strict sense of the word. On the other hand, inductive fallacies can be regarded so only in a loose sense.
- Example for denying the antecedent and affirming the consequent:
 - 1st premise: If (the government is weak), then (there will be anarchy) 2nd premise: The government is not weak.
Conclusion: Therefore there will be no anarchy.
 - Example for affirming the consequent:
1st premise: If (the government is weak), then (there will be anarchy)
2nd premise: There will be anarchy.
Conclusion: Therefore the government is weak.
- Three types of fallacies are common in a politician's speech. They are as follows; baculum, hominem and populum. Hitler's speech instigated Nazis to kill Jews. Therefore his speech is an example for baculum. When a politician makes public the immoral character of his opponent, his speech is an example for hominem. Mark Antony's speech which stirred up sympathy to Caesar in the minds of citizens leading to the murder of Brutus is an example for populum.