

A STUDY OF SOME FALLACIES IN LOGIC

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Abstract

This paper attempts to show why people commit logical fallacies in reasoning. The study of logic helps them learn how to distinguish good reasoning from bad reasoning and provides them criteria for evaluating reasoning as good or bad. Men as rational beings are capable of performing acts of reasoning, but most people ignore the method and principle of logic. They use irrelevant premises, ambiguous words or phrases or statements and unwarranted assumptions in communicating with others. These are causes of committing logical mistakes. To solve the problem the descriptive method and evaluative method will be used. This paper will contribute to knowledge that the role of logic is very important to avoid the logical errors in daily life.

Keywords: Logic, Logical fallacies, Good reasoning and Bad reasoning

Introduction

Logic, as a branch of philosophy, is a study of the basic ways of reasoning. Logic may be defined as the organized body of knowledge, or science that evaluates arguments. All of us encounter arguments in our day-to-day experience.

The aim of logic is to develop a system of methods and principles that we may use as criteria for evaluating the arguments of others and as guides in constructing arguments of our own. It is to develop methods that allow us to distinguish good arguments from bad arguments.

Men as rational beings know how to reason whether they have studied logic or not. Thus it should be noted that logic does not teach us to reason; it teaches us how to reason correctly.

Human beings are said to be rational meaning that they use reason in addition to sense experience or perception in daily life. But they also have strong feelings and desires that weaken reasoning. So reasoning becomes biased and prejudiced. Then there is language which also has an impact on reasoning. Words and phrases are used ambiguously and this leads to fallacious reasoning.

People's reasoning may be right or wrong. An examination of a certain number of arguments found three obvious causes of errors (1) The process of reasoning was faulty, (2) influence feeling and bias and (3) ambiguity and confusion of words and terms in the language used.

Fallacies due to faulty reasoning are called formal fallacies. Fallacies due to feelings and emotions and those due to ambiguity of language are called material fallacies.

There are many kinds of logic. But logic is generally classified into two kinds. One is formal logic and proponents of this kind of logic mostly hold that statements in natural language have an underlying logical form. If the inner structure of the form is correct, then a piece of reasoning in natural language is valid.

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The other kind is informal logic. It mainly focuses on the kind of reasoning that occurs informally, as for example, in our everyday exchange of words, in media reports, in advertisements, in legal briefs, political debates, and so on. In these fields, we often also find that training in formal logic alone does not help much, especially in social, political, educational, religious and economic exchanges. This is where informal logic plays a role. Informal logic aims at providing us with tools to access and analyze the reasoning behind statements expressed an ordinary language and to improve the required skills of an ordinary reasoner. It also helps to identify material fallacies and shows us ways to avoid them. Fallacies are patterns of bad reasoning, which seem like acceptable pieces of reasoning, but which actually contain logical defects.

Informal logic is not a formal system of logic, so there are no axioms on the basis on which theorems are proved. But, it makes use of principles or rules for an organized approach to logical problem solving.

Many arguments constructed are liable to logical mistakes or errors which are known as fallacies. There are many kinds of fallacies that people can make in reasoning or in argument. Although most logicians talk about the different kinds of fallacies, their treatments are not all the same. There is no universally accepted classification of fallacies.

In this paper, the study of fallacies will be confined to Informal Fallacies. Informal fallacies are errors in reasoning that do not involve the explicit use of an invalid form. Informal fallacies arise from the matter, material or content of the argument which may be due to the language used or the emotive impulse in making an assertion.

Material or Informal Fallacies

The study of material fallacies will help us to avoid errors in our daily reasoning. And then such a study will help us to appreciate the necessity of logic for our daily life.

In this paper, informal fallacies will be studied in three groups:

1. Fallacies involving irrelevant premises
2. Fallacies involving ambiguity
3. Fallacies involving unwarranted assumptions

1. Fallacies involving irrelevant premises (မသက်ဆိုင်မှုအခြေပြုအမှားများ)

These fallacies involve the use of premises that are logically irrelevant to their conclusions, but for psychological reasons, the premises may seem relevant. It will be show that the premises do not provide evidence for the conclusion.

1.1. Argument against the Person(*Ad Hominem Fallacy*)(လူအားနည်းချက်အခြေပြု အမှား)

It involves attacking the person who advances an argument as opposed to providing a rational critique of the argument itself. The argument against the person is a kind of personal form of abuse. It can be found the form in the following Myanmar proverbs.

“Ill-treat an already hapless”- that is, to help blame on one who is poor and helpless.

(မြေနှိမ်ရာ လှံစိုက်။)

“Rain follows the unlucky maid wherever she goes”. Giving the excuse that a young maid always meet misfortune because she was born under an unlucky star.

(ကံဆိုးမ သွားရာ မိုးလိုက်လိုရွာ။)

“To plump a pumpkin down on top of some place already groaning under the weight of gourds”. People are oppressed because they are weak and fearful.

(ဗူးလေးရာ ဖရုံဆင့်။)

“Scorpions infest a place already rampant with snakes”. Evil will flourish where there are many evil people. (This proposition gives no new information. It is a tautology.)

(မြွေပူရာ ကင်းမှောင့်။)¹

These proverbs fail to give sound reasons for the views expressed. They only give excuses by pointing out the weakness of the person or persons concerned. Hence they are based on irrelevant premises.

1.2. Appeal to Force (*Ad Baculum Fallacy*) (အင်အားပြ အနိုင်ယူမှုအမှား)

The appeal to force occurs when a conclusion is defended by a threat to the well-being of those who do not accept it. Such a threat is logically irrelevant to the subject matter of the conclusion.² The appeal to force is highlighted in the saying “might makes right.” There are some Myanmar proverbs, that appeal to force.

“A cow will be spared only if the tiger takes pity”. This proverb assumes that it is natural that power and strength prevail in this world. It ignores moral rules such as justice or fairness.

(ကျားသနားမှ နွားချမ်းသာ။)

“Like water in the cupped hand, he can either throw it away or spill it”. This case concerns political and socio-economic might.

(လက်ခုပ်ထဲကေရ သွန်လိုသွန် မှောက်လိုမှောက်။)

“If fire is in force, fire prevails and if water is in force, water prevails”. A Myanmar version of the force of the many over the few- a tyranny of the majority.

(မီးများမီးနိုင် ရေများရေနိုင်။)

“Verdict goes in favour of money”. Justice cannot withstand the force of wealth.

(ငွေများ တရားနိုင်။)³

¹ Soe, Lu (San Lwin), (1996), *Myanmar Proverbs*, Yangon, Zaung Press.

² Layman, C. Stehhen (edit) (2005) *The Power of Logic*, New York: The McGraw-Hill companies, p.128

³ Soe, Lu (San Lwin), (1996), *Myanmar Proverbs*, Yangon, Zaung Press.

These proverbs argue that it is the way of the world for the powerful and mighty to terrorize the weak and ignores the need for morality.

1.3. Appeal to the people (*Ad Populum Fallacy*) (ပရိတ်သတ်စွဲဆောင်မှုအမှား)

Nearly everyone wants to be loved, esteemed, admired, valued, recognized, and accepted by others. The appeal to the people uses these desires to get the reader or listener to accept a conclusion. There are two approaches such as direct and indirect.

The direct approach occurs when an arguer, addressing a large group of people, excites the emotions and enthusiasm of the crowd to win acceptance for his or her conclusion. The objective is to arouse a kind of mob mentality. This is the strategy used by nearly every propagandist and demagogue. It is a method found mostly in political campaigns. There is no mention of the qualifications or capability of the candidate standing for election. It is a kind of appeal to personality and appearance.

The indirect approach focuses on one or more individuals. This approach includes such specific forms as the bandwagon argument, the appeal to vanity, and the appeal to snobbery. All are standard techniques of the advertising industry. For example:

A decent woman wears a single flower in her hair.

(မိန်းမကောင်းပန်းပန် တစ်ပွင့်တန်။)

Any snake will straighten out on entering its hole.

(မြွေမှန်လျှင် တွင်းဝင်ဖြောင့် ။)

A lowly pallet becomes a golden palace in one's imagination.

(ကိုယ်ထင် ခုတင်ရွှေနန်း။)

Praise your own pickled fish.

(ကိုယ်ငါးချဉ် ကိုယ်ချဉ်။)

1.4. Appeal to Pity (*Ad Misericordiam Fallacy*) (မျက်ရည်ခံထိုးအမှား)

The appeal to pity fallacy occurs when an arguer attempts to support a conclusion by merely evoking pity from the reader or listener. These statements that evoke the pity are logically unrelated to the conclusion.¹ It can be found the form in the following Myanmar proverbs.

Example;

He stole two loaves of bread. But he does not make a life of thieving. His children are starving and are dying. He has no way for solving this problem. That's why it was stolen.

The premises here are simply irrelevant to the conclusion which is the stealing of bread. It is not regarded as immoral because the thief is poor. If the arguer succeeds in evoking sufficiently strong feelings of pity, he may create a desire to accept the conclusion. For this reason, the lawyers often use the appeal to pity in an effort to convince judges and juries that their clients are not guilty.

¹ Layman, C. Stehhen (edit)(2005) *The Power of Logic*, New York: The McGraw-Hill companies, p.131

1.5 Appeal to Ignorance (*Ad Ignorantiam Fallacy*) (သက်သေမပြနိုင်မှုအမှား)

The appeal to ignorance involves two ways of committing the fallacy. Firstly, the statement is true or may be reasonably believed true simply, because it has not been proven false. For example;

After centuries of trying, no one has been able to prove that reincarnation occurs. So, at this point, I think we can safely conclude that reincarnation does not occur.¹

Secondly, the statement is false or may be reasonably believed false simply, because it hasn't been proven true.

After centuries of trying, no one has been able to show that reincarnation does not occur. So, reincarnation occurs.²

The claim that the statement is false because it hasn't been proven is manifestly erroneous. By such logic, scientists would have to conclude that their unproven hypotheses are false. And surely it is wiser for scientists to take a "wait-and-see" attitude. We often have the option of suspending judgment. We do not have to believe that the statement is true or false. We can remain neutral. Similarly, the claim that a statement is true because it hasn't been disproven is illogical. By this principle every new scientific hypothesis is true until it has been disproven.

2. Fallacies involving ambiguity (အဓိပ္ပါယ်မတိကျမှု(သို့) အဓိပ္ပါယ်နှစ်ခွဲထွက်ခြင်းအမှား)

The fallacy of ambiguity arises through the use of terms that are vague. Most words have more than one literal meaning. Arguments are sometimes flawed because they contain ambiguous words (phrases or statements) or because they involve a subtle confusion between two closely related concepts. A sentence containing such elements commits fallacies involving ambiguity. The following fallacy that is the fallacy of Equivocation is closely to that of ambiguity.

2.1. The Fallacy of Equivocation (အဓိပ္ပါယ်နှစ်စွန်းထွက်(သို့) အဓိပ္ပါယ်နှစ်ခွဲထွက်အမှား)

The fallacy of equivocation occurs when the conclusion of an argument depends on the fact that a word or phrase is used in two different meanings in the argument. Such arguments are either invalid or have a false premise, and in either case they are unsound. For example;

“Power tends to corrupt. Knowledge is power. Therefore, Knowledge tends to corrupt.”

This argument is fallacious because two different senses of the word “power” are used. The word “power” may mean either “the possession of control or command over people” or “the ability to control things.” If we rewrite the argument to make the two meanings explicit, the validity is apparent.

¹ Layman, C. Stehhen (edit) (2005) *The Power of Logic*, New York: The McGraw-Hill companies, p.132

² Ibid.

2.2. The Fallacy of Composition (ပေါင်းစည်းမှုအမှား)

The fallacy of composition is committed when the conclusion of an argument depends on the erroneous transference of an attribute from the parts of something onto the whole.

The label “fallacy of composition” applies to two similar types of invalid inference. The first is an invalid inference *from the nature of parts to the nature of whole* that is equating a part with the whole. Example:

Each player on the football team is outstanding. Hence, the team itself is outstanding.

Even if each of players on a team is outstanding, the team itself may not be outstanding if there is a lack of teamwork or insufficient opportunity to practice together. Secondly, there is the Fallacy of Division.

2.3. The Fallacy of Division (ခွဲခြားမှုအမှား)

The Fallacy of Division is the exact reverse of the fallacy of composition. This fallacy is committed when the conclusion of an argument depends on the erroneous transference of an attribute from a whole onto its parts that is identifying the whole with its constituent parts. For example:

Because the choir is excellent therefore the individual singers are excellent.

A team may be excellent due to teamwork and a few outstanding players and yet have members who are not themselves excellent players. This example is an invalid inference *from the nature of the whole to the nature of the parts*.

3. Fallacies involving Unwarranted Assumptions

(ခိုင်လုံတဲ့ အကြောင်းပြချက်မပေးနိုင်သော၊ ယူဆထင်မြင်ချက်များ ပါဝင်သော အမှားများ)

Some errors in reasoning result when the arguer makes an unwarranted assumption. An unwarranted assumption is a premise that is weak or irrelevant .So the evidence provided in the premise or premises is not sound and the conclusion is invalid or unjustified, thus undermining the force of the argument.¹

3.1. The Fallacy of Begging the Question (*Petitio Principii*)

(ကရိုက်ကင်းလျှောက်အမှား)

The fallacy of begging the question is committed when the argument is circular. The conclusion is simply the part of the premise or the premises which has been assumed as evidence. It is simply reasoning in a circle. *Petitio Principii* means “request for the source.” The actual source of support for the conclusion is not apparent, and so the argument is said to beg the question.

The first form of committing this fallacy is by leaving a possibly false key premise out of the argument while creating the illusion that nothing more is needed to establish the conclusion. Example:

¹ Layman, C. Stehhen (edit) (2005) *The Power of Logic*, New York: The McGraw-Hill companies, p.149.

A. Mg Ba is lazy

B. Why so?

A. Because he is fat.

B. Why he is fat?

A. Well, it must be because he is lazy.

On encountering this argument, the attentive reader is inclined to ask, “Where does this reasoning begin? What is its source? Since the argument goes in a circle, it has no beginning or source, and as a result it proves nothing.

In this case of begging the question, the arguer uses some linguistic device to create the illusion that inadequate premises provide adequate support for a conclusion.

3.2. The Fallacy of False Cause (မှားယွင်းသော အကြောင်းတရားဆိုင်ရာအမှား)

The fallacy of false cause occurs whenever the link between premises and conclusion depends on some imagined causal connection that probably does not exist. For example;

**Every time Mya Mya goes shopping wearing a red dress she is pick-pocket.
So now she does not wear a red dress when she goes out because it brings her
bad luck.**

This argument depends on the supposition that the red dress caused her loss of money. No causal connections seem to exist. This argument illustrates a variety of the false cause fallacy called *post hoc ergo propter hoc* (“after this, therefore on account of this”). This variety of the fallacy presupposes that just because one event precedes another event, the first event causes the second. For example;

**The best professional teachers receive big salaries. Therefore, in order to
guarantee that Mg Ba will become one of the best professional teachers, we
should give him a big salary.**

This argument depends on the supposition that a high salary causes success. It illustrates a variety of the false cause fallacy called *non causa pro causa* (“not the cause for the cause”). This variety is committed when what is taken to be the cause of something is not really the cause at all. In reference to this argument, success as an executive causes increases in salary – not the other way around – so the argument mistakes the cause for the effect.

The next variety of the false cause fallacy occurs when a multitude of causes is responsible for a certain effect but the arguer selects just one of these causes and represents it as if it were the sole cause.

**The quality of education in our high school has been declining for years.
Clearly, our teachers just aren’t doing their job these days.¹**

The declining in the quality of education is caused by many factors, including lack of sound education policy, lack of parental involvement, too much mobile telephone and television, and drug use by students. Poor teacher performance is only one of these factors and probably a minor one at that.

¹ Chakraborti, Chhanda(edit)(2007) *logic:Informal, Symbolic & Induction*, New Delhi.p,144

Conclusion

The sources of knowledge are perception, inference, testimony and authority. One of the sources of knowledge is inference or reasoning which deals with logic.

Logic, a branch of philosophy, is the study of reasoning. It is generally accepted that reasoning is a part of understanding of common social behavior. Reasoning occupies a major role in the decision-making process. So, to reason correctly is necessary for mutual understanding in social relationship.

Reasoning may be correct or incorrect. Correct reasoning requires that the thinking process must correspond with things of the actual world to reason correctly. Reasoning is a form of thinking but differs from other forms of thinking such as imagining things, emotional thinking and other random ways of thinking. In reasoning a person needs to be free from feelings, emotions and bias. Our thoughts are connected and must be purposive. The usage of language must also be definite, clear and distinct.

As every student of logic knows, logical thinking or reasoning is of two main kinds, deductive reasoning and inductive reasoning. Deductive reasoning is mainly concerned with consistency in thinking and arriving at certain conclusions. To be able to reason deductively there is a need for certain given assumptions or certain given statements that are considered true and when reasoning deductively the conclusion arrived from these premises must be true; then the reasoning is considered valid or in lay terms logical. But the propositions which are premises on which the argument is based are obtained from inductive reasoning. These propositions are obtained through generalization of instances obtained through observation and experience. So the instances which act as premises for inductive reasoning must correspond with facts of experience to be considered true. Inductive conclusions are therefore inferred by generalization of the facts of experience. Truth of facts are material truths, so it is at this causal point that it is important to avoid material fallacies.

It is true that deduction gives priority to validity, that is logical connection and it is not its task to test material truth. But a deductive argument also has no value if its premises are unsound. So avoiding material fallacies is also important for deductive reasoning. This paper is intended to bring out the importance of knowledge of material fallacies for both deductive and inductive reasoning and the need to avoid such fallacies.

How to avoid fallacies? How to make good or sound arguments? One needs to take care in all forms of reasoning. One must not draw conclusion based on emotions and desires. Reasoning is a mental process in which the conclusion of an argument is drawn from its premise or premises. So to be a good reasoning or to be a valid argument, the conclusion of an argument necessarily follows from its premise or premises. Another point is that its premise should be justifiable and sound. So, in this case, the selection of the premises in arguments is essential. The error in premise is a factual error. A true conclusion cannot be deduced from the false premise. The factual error in premise comes to be a weakness in the argument. It undermines the support for its conclusion. Because of this error in the premise, the conclusion does not follow from the premise. In other words, it commits fallacy in reasoning.

Once the premises are selected, one needs to check three points such as authenticity of the premises, relevance for the argument and power of persuasion.

An argument should be logically established by sincere efforts and not by rhetorical efforts. An argument based on rhetorical tricks has no strength and has the lowest probability in the conclusion.

To establish an argument, one should be free from mistaken beliefs, peer pressure, desire to win at any cost, short-term goals and impulses. If it is not free from these points, then it leads to fallacies.

Logic provides the criteria for evaluating reasoning as good or bad. Most people ignore the methods and principles of logic. They use irrelevant premises, ambiguous words or phrases or statements and unwarranted assumptions in communicating with others. So people commit logical mistakes in reasoning. So, it is very important to avoid material fallacies in daily reasoning.

The function of logic is to get reliable result, to avoid mistakes in reasoning and to detect errors in the reasoning and ways of thinking in other people. The study of logic cultivates the power of abstract thinking, and trains and develops reasoning powers. It will create strong and effective decision- making through logical reasoning. So, the role of logic is very important and this paper will contribute to avoid the logical fallacies in daily life. Logical reasoning is important for all fields of knowledge, science and technology, politics and economics or in the liberal arts.

References

- Chakraborti, Chhanda(edit)(2007) *logic: Informal, Symbolic & Induction*, New Delhi.
- Hla Bu, Maung and Kar, K.N,(1956), *A Text Book of Modern Formal Logic*, Oxford ; Oxford University Press.
- Hurley, Patrick (edit) (2012) *A concise Introduction to Logic*,China.
- Khin Maung Din,U. *Introduction to Elementary Logic*, Yangon.
- M.Copi,Irving(edit) (1958) *Introduction to Logic*,New York: The macmilla company.
- Layman,C. Stehhen(edit)(2005) *The Power of Logic*,New York: The McGraw-Hill companies.
- Soe,Lu (San Lwin),(1996), *Myanmar Proverbs*, Yangon, Zaung Press.
- Weddle, Perry(1978)*Argument: A Guide to Critical Thinking*, USA, The McGraw-Hill companies.