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January 27, 2003

"What is Logical"

In order to determine whether something is logical or not, one must have studied the basics of logic and understood it. It is not based on the mere fact that something would seem to make sense to a person, because each individual differs in though and understanding. What one might think is funny, another would consider rude. Therefore, in logic, there must be a set of rules, which would determine whether one's reasoning is correct or incorrect. If it were correct, it would be logical. This is where the difficulty and ambiguity of logic come in. How do we determine whether something is logical or illogical?

Copi, like many others has studied logic and developed theories about it. According to him, logic is the study of the methods and principles used to distinguish good (correct) from bad (incorrect) reasoning. In order to do this; he establishes rules and methods of discovering whether an argument is valid. It is important to note the difference between truth and the validity of an argument. Truth and falsehood are applied to define propositions, but never the argument. The argument is defined as being valid or invalid.

It is possible for an argument to be valid, and have all true propositions. For example:

All puppies are dogs.

All dogs are animals.

Therefore, all puppies are animals.

It is also possible for an argument to be valid while having false propositions. For example:

All cats have long noses.

All long noses are green.

Therefore all cats have green noses.

Here, the argument is valid while the premisses, defined by Copi as propositions, which are affirmed (or assumed) as providing support or reason for accepting the conclusion, are false. The conclusion, defined as the proposition that is affirmed on the basis of the other propositions of the argument, is also false.

Likewise, it is possible for an argument to have true premisses and a false conclusion, which would result in an invalid argument. For example:

If I had practiced I would have done well on this quiz.

I did not practice.

Therefore I did not do well on the quiz.

This argument is invalid because it says that this person did not do well on the quiz, while it is possible that the person could have done well on the quiz without practicing. The conclusion is therefore clearly false and the argument invalid.

An argument that has a true conclusion and false premisses could either be valid or invalid. Here is an example of a valid argument with false premisses and a true conclusion.

All humans are aliens.

All aliens live on Earth.

Therefore all humans live on Earth.

The following is an example of an invalid argument that has a true conclusion and false premisses:

All animals have tails.

All dogs have tails.

Therefore all dogs are animals.

Finally, there is the invalid argument that has false premisses and a false conclusion. For example:

All animals have tails.

All dogs have tails.

Therefore all animals are dogs.

If all of the premisses of an argument are false and the conclusion is false, then the argument is not valid.

Determining the truth of propositions is easy, and many times irrelevant when it comes to logic. It is deciding whether an argument is valid or invalid that takes a lot of

work. There are many ways to determine the validity of an argument in order to prove it logical or illogical. One of the ways is through fallacies. A fallacy is a type of argument that may seem to be correct, but that proves, on examination, not to be so. There are many different types of fallacies, which could prove an argument invalid and illogical. For example there is the fallacy ad verecundiam (Appeal to Inappropriate Authority) that arises when the appeal is made to parties having no legitimate claim to authority in the matter at hand. Here is an example of this:

I say that all people who ride the train are poor people
because when I talked to Bill Gates he told me that if a
person rides the train then that person is poor. And I believe
everything that Bill Gates says, so it has to be true that all
people who ride the train are poor people.

In this case, Bill Gates has no appropriate authority to determine whether a person is poor or not based on the fact that they ride the train. A wealthy businessman could ride the train in order to avoid the morning traffic and he is obviously not poor.

When arguments are made using categorical syllogism, which is a deductive argument consisting of three categorical propositions that together contain exactly three terms, each of which occurs in exactly two of the constituent propositions, it is important to follow the rules. They deal mostly with the quality (affirmative/negative), the quantity (all/some), and the distribution of the propositions. Any violation of the rules would result in an invalid argument and would therefore be not be logical. For example one of

the rules states that in a valid standard-form categorical syllogism, if either term is distributed in the conclusion, then it must be distributed in the premisses.

All great nineteenth century composers ate cookies.

All nineteenth century composers were brilliant people.

Therefore all brilliant people ate cookies.

In this example the term brilliant people is distributed in the conclusion, while it is not distributed in any of the premisses, which makes it invalid.

Using symbols and truth tables can also test the validity of arguments that are made in standard English. The dot is the symbol for conjunction, which is true if and only if both of the conjuncts it connects are true. The wedge is the symbol for disjunction and is true if at least one of the disjuncts it connects is true. The curl is the symbol for negation and is the opposite of whatever the quality of the statement is. Finally, the horseshoe symbol is a material implication, and is true in all instances except when one is true and the other one is false. With these symbols and truth tables it is possible to determine whether something is valid or invalid, logical or illogical.

All of these are ways of discovering whether something is valid or invalid in order to prove it logical or illogical. It is also important; however, to acknowledge that validity is not the only way to establish what is logical. In life there are many things, which could be argued, but there is not need to. For example:

It is only logical that when a ball is thrown up into the air it will fall back down.

This is due to the fact that there is gravity on Earth that will pull the ball down. When it is said that the ball will come down it is understood that gravity would pull it down and there is no need to form an argument and test its validity. This type of logic is acquired through experience. The more things one person sees, the more they will become accustomed to them and become familiar with their features, which they will consider logical.

There are different ways in which a person can establish whether something is logical or not. There are the many definitions and formulas given in logic books that would allow a person to test the validity of an argument. This is a process, which requires a person to read and understand the material that is presented to them. The other way of determining whether something is logical is through personal experience. If one witnesses the same action numerous times, it is logical that they will become familiar with it and await the outcome.