

TRUE AND FALSE SYLLOGISMS

Let's look at an argument, a syllogism that is nonsensical.

Dogs and cats are English words.
But English words do not eat meat.
Therefore dogs and cats do not eat meat.

Here is another.

One cat has one more tail than no cat.
But no cat has ninety-nine tails.
Therefore one cat has a hundred tails.

Here's another that we addressed in our lessons on proving God's existence.

God is that than which a greater cannot be thought of.
But that than which a greater cannot be thought of exists.
Therefore God exists.

When we see or hear arguments such as these put forward, we know in our bones that there is something wrong. Just because the arguer says 'therefore' it doesn't follow that his argument is reasonable. We must look at the rules for a valid syllogism, for each of these arguments offends one or more of those rules.

Given the weakness of our human intellects, it is very easy when we are arguing to slide from one meaning to another. Before we analyse these three arguments, it will pay to look at the character that delineates the difference in the meaning of words, *supposition*.

Supposition

The word 'supposition' is from the Latin verb *supponere*, 'to put in place of another', and the noun *suppositus*, derived from its past participle, means 'taking the place of'. *Supposition* is defined in Logic as *the function of standing for some thing*. Every word we use, every term (to use the language of Logic) stands for some thing. We may use a word to describe what we experienced in a dream, say, 'running'. We may use the same word to describe what we observe the boy, John Pat, to be doing now as he chases the dog across the yard. Again, we may use the word 'dreaming' to indicate that I am not paying attention to the duty of the moment but am, instead, letting my attention wander, or we may use 'dreaming' to mean the exercise of our minds when we are asleep. In each of the two cases the word is used with a different function, a different *supposition*.

Now when this occurs in an argument, when we pass from one meaning, one *supposition*, of a term to another, it has the effect of adding a term in the argument

which, as we will see, invalidates the argument. At the end of this lesson I have set out the eight laws to which a syllogism must conform if it is to be a valid argument. I will use these three instances to illustrate breaches of some of those laws.

The problem with the first argument

The first argument illustrates the **first law** of the syllogism that *there must be three terms, and three terms only*, (S, M & P). In the first of these three arguments there are not three terms but four. 'Dogs and cats' in the first line are presented in *material* supposition. That is, they stand for words only, not the things signified by the words. 'Dogs and cats' in the conclusion are used in *formal* supposition. They stand for the things themselves. So that the 'dogs and cats' in the first premise is not the same term as it is in the conclusion. Therefore, the argument is invalid.

The problem with the second

The second argument is riddled with breaches of the applicable laws. In the first place, it offends against the first law because it contains *five* terms not just three.

'one cat'
'having one more tail than no cat'
'no cat'
'having ninety-nine tails'
'having a hundred tails'

In the second place there is a change in signification of the expression 'no cat'—a different *supposition*. In its first usage 'no cat' is an infinite term signifying 'non-cat' (= 'that which is not a cat') which is the subject of an affirmative proposition. In its second usage 'no cat' is a finite term, the subject of a negative proposition (= 'not one cat'). You can see the falsity if you analyse these two—

'No cat has ninety-nine tails' – which is a negative proposition, and true;
&
'Non-cat has ninety-nine tails' – which is an affirmative proposition, and false.

The other law that the syllogism offends is the **seventh law** which requires that any conclusion must follow the worst, or weakest, part of the premises. For instance, a negative proposition is worse than an affirmative one. 'No cat has ninety-nine tails' is weaker, for instance, than 'a cat (one cat) has one tail'. There are other problems too, but these are sufficient to show the argument's falsity.

The problem with the third

In the third argument there are four terms and not three. For 'exists' in the second proposition *supposes for* 'signified as existing', or 'existing in mind', whereas 'exists' in the conclusion *supposes for* 'exercised existence', or 'really exists'. So the argument is, as we said in the lessons on God's existence, not a valid argument.

Let's take a fourth argument.

Whatever falls under our senses exists.
But God does not fall under our senses.
Therefore God does not exist.

The word 'exists' (i.e., 'does exist') in the first premise is particular (*supposes particularly*), standing for 'some existing thing'. But 'exist' in the conclusion is universal (*supposes universally*), signifying 'no existing thing'. This illustrates the **second law** of the syllogism, namely, that *the terms must never be broader in the conclusion than they are in the premises*. The flaw in the argument is clearer if we spell out each use of 'exist(s)'.

Whatever falls under our senses is *some existing thing*.
But God does not fall under our senses.
Therefore God is *no existing thing*.

The **fourth law** requires that *the middle term must be universal at least once*. Take this argument:

Some animal is a substance.
But some man is an animal.
Therefore some man is a substance.

The argument seems alright but it is not. The middle term M, the one that leads to the conclusion, is 'some animal'. Here 'animal' *supposes particularly* because of the prefix 'some'. To be universal it would have to be prefaced by 'every' or by using the word in a fashion as to signify the universal, as in 'animal is a substance'. Thus, while the conclusion is true, it does not follow from the premises.

The **fifth law** says that *from two negative premises nothing follows*. Take this example:

The powerful are not merciful. (negative)
But the poor are not powerful. (negative)
Therefore the poor are merciful.

The conclusion does not follow. There are many poor who are not merciful!

Yet note how the words in an argument may be misleading. Consider this one—

No non-living thing is mortal.
But no rock is a living thing.
Therefore no rock is mortal.



Here the conclusion is valid because, while the first premise is negative, the second, though it appears to be negative, is in fact affirmative. For the middle term is 'non-living thing', so that the second premise is in reality this, 'a rock is a non-living thing'. Let's put it in a way that removes the obscurity:

No non-living thing is mortal.
But a rock is a non-living thing.
Therefore no rock is mortal.

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Now, this is not an exhaustive course in Logic so I will not illustrate each of the laws. But I will set out the eight laws so that you can look to them if it should ever be necessary.

The Eight Laws of the Syllogism

There are four that concern *terms*, numbers 1, 2, 3 & 4, and four that concern *propositions*, numbers 5, 6, 7 & 8. Here they are:

1. There must be no more than three terms, major, middle and minor.
 2. The terms must never be broader in the conclusion than they are in the premises.
 3. The middle term must never enter into the conclusion.
 4. The middle term must be universal at least once.
 5. From two negative premises nothing follows.
 6. When both the premises are affirmative, the conclusion must not be negative.
 7. The conclusion always follows the worst part in the premises.
 8. From two particulars nothing follows.
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