Logic 2.02 Reading – Mood in Syllogisms

"Logic takes care of itself; all we have to do is to look and see how it does it."
-Ludwig Wittgenstein

_____ Introduction. In the Reading 2.01, we discussed the four ways a syllogism can be formed according to the disposition of terms. These four ways we called a syllogism's *figure* In this chapter, we will talk about *mood*.

We defined figure as the *disposition* (or *location*) of terms in a syllogism. In other words, how the *terms* are arrayed in the syllogism. *Mood* is defined as follows:

Mood is the disposition of the premises according to quantity and quality.

Another way of saying this is that the *mood* of the syllogism is *the arrangement of* **PROPOSITIONS** *according to quantity and quality* (as A, E, I, or O)

For example, we say that a syllogism has the mood **AA** when the first (or *major*) premise is an A statement and the second (or *minor*) premise is also an A statement. Again we say that a syllogism has the mood *EA* when the first premise is an E statement and the second premise is an A statement.

Look at the following syllogism:

All mortals must die
All men are mortal
Therefore, all men must die

In what mood is this syllogism? We see that the first premise is an A statement, and the second is an A statement. Therefore, the mood of the syllogism is *AA*.
Let's take another example:

No men are immortal
All angels are immortal
Therefore, no angels are men

What mood is this syllogism in? We see that the first premise is an E statement. The second is an A statement. Therefore, the mood of the syllogism is EA.

Since there are four different kinds of statements (A, E, I and 0), they
can be combined into 16 different moods (4 x 4) as follows:

MAJOR

	A	**E**	**I**	**O**
A	AA	EA	IA	OA
E	AE	EE	IE	OE
I	AI	EI	II	OI
O	AO	EO	IO	OO

MINOR (labels the rows on the left)

Be careful that your premises are in the proper place-major premise first and minor premise second. If they are not in the proper order, you can easily misidentify the mood of a syllogism.

Let's put this in another arrangement to help you see:

There are sixteen possible combinations of premises, since there are four types of categorical propositions: Thus in the premises, the possible moods are (**read vertically**):

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Major Premise: A A A A      I I I I      E E E E      O O O O
Minor Premise: A E I O      A E I O      A E I O      A E I O
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_____ Figure and Mood. Furthermore, each of these sixteen moods can be found in each of the four figures. In other words, a syllogism in the First Figure can be in the mood AA, AE, AI, AO, EA, EO, etc. This means that there are a total of 64 different kinds of syllogisms according to mood and figure (16 moods x 4 figures).

But although there are 64 different kinds of syllogisms, not all of them are valid. In some cases, whole moods are invalid. For example, EE syllogisms, whether they are in the First , Second, Third or Fourth figure are invalid. Why? Remember Rule V? It said that no conclusion can follow from two negative premises. E is a negative statement, therefore, a syllogism in which both premises are E statements cannot be valid.

The same goes for syllogisms in mood OO, since O statements are also negative. In fact, if we constructed syllogisms in all 64 of the possible combinations, and applied the seven rules we learned earlier, we would find that only 19 of them are valid.

Here you can see that all of these are invalid:

Major:	I	I	E	E	O	O	O
Minor:	I	O	E	O	E	I	O

The mood IE is invalid, since, with the major premise an I proposition, the major term is undistributed in the premises; and since the conclusion of IE must be negative, the major term must be distributed in the conclusion. The mood IE, therefore, always involves an *illicit major.* Our sixteen possible moods are then reduced to *eight* possibly valid ones:

Major:	A	A	A	A	I	E	O	E
Minor:	A	E	E	O	A	A	A	I

Four of these valid moods have A for the major premise, three others have A for the minor premise, and there is one EI sequence.

So far we've been looking at premises only. But the entire mood of a syllogism includes the conclusion. Typically we describe the mood of an argument as including all three statements. For instance, AAA, or AAI, AAE, and so on, to OOO.

_____ Combining Figure and Mood

Any standard-form syllogism is completely described when we specify its mood and its figure.

Let's look at this example:

No heroes are cowards.
Some soldiers are cowards.
Therefore, some soldiers are not heroes.

This argument is in second figure. "Cowards," the middle termis the predicate term of both premises. Its mood is EIO. So it is completely described as being a syllogism of the form **EIO-2**. It is a valid syllogism, as we noted; every valid syllogistic for, has its own name. The name of this form, **EIO-2**, is *Festino.* We say of this syllogism that it is "in *Festino.*" (We'll learn more about the names in the next section.)

Here is another example:

No M is P.
All S is M.

Therefore, No S is P

This syllogism is in the first figure (its middle term is the subject of the major premise and the predicate of the minor premise); its mood is **EAE**. So we may characterize it completely as **EAE-1**, a form whose unique name is *Celarent*. Any syllogism of this form is "in *Celarent*," just as any syllogism of the earlier form is "in *Festino*." Because *Celarent* (**EAE-1**) and *Festino* (**EIO-2**) are known to be *valid* forms, we may conclude that whenever we encounter an argument in one of these forms, we may conclude that whenever we encounter an argument in one of these forms, it too is valid..

With these analytical tools we can identify every possible categorical syllogism by mood and figure. If we were to list all the possible moods, beginning with **AAA, AAE, AAI, AAO, AEA, AEE, . . .**, and so on, we would eventually (upon reaching **OOO**) have enumerated the sixty-four possible moods mentioned earlier. Each mood can occur in each of the four figures; 4 x 64 = 256. It is certain, therefore, that there are exactly 256 distinct forms that standard-form syllogisms may assume.

Of these 256 possible forms, as we shall see, only a few are vaid forms. Each of those valid forms has a unique name, as will be explained.

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