Introduction. Now that we have mastered the rules of validity for categorical syllogisms, we turn to figures and moods. Categorizing syllogisms according to figure and mood will deepen our understanding of the syllogism and give us a shortcut in determining validity.

The figure of the syllogism can be defined as follows:

The figure of a syllogism is the disposition (or location) of terms in the premises.

The figure of a syllogism is determined by the position of the middle term. There are four figures in all.

Review of Terms. In order to properly understand syllogistic figures, we must remember the terms in a syllogism and the letters that designate them. We must remember that the letter $P$ designates the major term (which is the predicate of the conclusion). The letter $S$ designates the minor term (which is the subject of the conclusion); and the letter $M$ designates the middle term (which is the term that appears in both premises, but not in the conclusion).

We must also remember that the premise that contains the major term (which we call the major premise) always comes first. Thus, a typical syllogism might look like this:

All $M$ is $P$
All $S$ is $M$
Therefore, all $S$ is $P$

The location of $M$ (the middle term) in each premise will tell us what figure the syllogism is in.
Chapter 1

The First Figure. In a syllogism of the First Figure, the middle term is the subject in the major premise and the predicate in the minor premise. We call this figure sub-prae, which is short for subjectum-prae dicatum, which is Latin for subject-predicate, the subject being the place of the middle term in the major premise and predicate being the place of the middle term in the minor premise.

An example of a sub-prae or First Figure syllogism would be:

All human beings are mortal.
All boys are human beings.
Therefore, all boys are mortal.

Sub-prae.

M P
S M
S P

You can see that the middle term is the subject in the major premise and the predicate in the minor premise. Therefore, this syllogism is sub-prae.

The Second Figure. In a syllogism of the Second Figure, the middle term is the predicate in the major premise and the predicate in the minor premise.

We term this figure praeprae, which is short for praepraedicatum-prae dicatum, which is Latin for predicate-predicate, the predicate being the place of the middle term in both premises.

An example of a praeprae or Second Figure syllogism would be:

All men are mortal.
No angels are mortal.
Therefore, no angels are men.

Praeprae.
P M
S M
S P
praeprae.

The Third Figure. In a syllogism of the Third Figure, the middle term is the subject in the major premise and also the subject in the minor premise.

The Fourth Figure (Indirect First). There is also what some have called a Fourth Figure. However, Fourth Figure syllogisms are actually just another form of the First. They are what we will call the Indirect First.

In a Fourth Figure syllogism, the middle term is the predicate in the major premise and the subject in the minor premise. In other words, a praeprae. We say it is not a figure in and of itself but only a form of the First because the only difference between it and the First is in the grammar of the syllogism; the arrangement of the words only makes it look different, but logically it is the same.

An example of the Fourth Figure would be:

All Romans are men.
All men are mortal.
Therefore, some mortals are Romans.

Prae-sub.
P M
M S
S P

As you can see, the middle term (men) is the predicate in the major premise and the subject in the minor premise.

Future Figure is sometimes called the Galenic figure because it was Claudius Galen, who lived from A.D. 131 to about A.D. 200, who first considered that it was a separate figure. Galen was considered the chief authority on medicine for over a thousand years. But while Galen and many modern logicians think the Fourth Figure is distinct from the First,
Aristotle and all the rest of the ancient logicians thought it was only another form of the First.

We will side with the ancients and concentrate primarily on the first three figures. However, we do encounter syllogisms in this form, so we need to be prepared to handle them.

How to Remember the Figures. There are many Latin sayings that logicians in the Middle Ages invented to help us remember certain things in logic. The Latin saying that helps us remember figures goes like this:

Sub-prae prima, bis praec secondo, tertia sub bis.

It means, sub-prae first, praec twice second, sub twice third. In other words, sub-prae is the First Figure, praec-prae (praec twice) is the Second, and sub-sub (sub twice) is the Third. By memorizing this saying, you will be able to remember where the middle term is in each of the three figures.

Summary. This chapter concerns the figure of syllogisms. The figure of a syllogism is defined as the disposition of terms in the premises. The terms in a syllogism can be arranged in one of three (some would say four) different ways. We identify the figures according to the location of the middle term.

A syllogism in which the middle term is the subject in the major premise and the predicate in the minor premise is called a sub-prae or First Figure syllogism. A syllogism in which the middle term is the predicate in the major premise and the predicate in the minor premise is called a praec-prae or Second Figure syllogism. A syllogism in which the middle term is the subject in the major premise and the subject in the minor premise is called a sub-sub or Third Figure syllogism.

There is also an Indirect First Figure, which some logicians have considered to be another figure altogether—a Fourth Figure syllogism. Its middle term appears in the predicate of the major premise and in the subject of the minor premise, making it a praec-sub. But it only looks like a different figure and is really just a form of the First.

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

Mood in Syllogisms

Introduction. In the last chapter, 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.

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 mortal
Therefore, no angels are men
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, EE, AO, 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 in Chapter 13 of Book I? 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 in Book I, we would find that only 19 of them are valid.
Chapter 2

How to Use the Mnemonic. The mnemonic (BARBARA, CELARENT, DARII, etc.) gives us a much quicker way to determine the validity of a syllogism than using the seven rules put in the form of a syllogism and see if it is one of the syllogisms in the mnemonic. If it is, then it is valid; if it is not, then it is invalid. There are three steps involved:

Step #1: Determine the figure.
Step #2: Determine the mood.
Step #3: Determine whether the mood is included in the mnemonic verse.

Five Common Syllogisms. The following are the five most commonly encountered syllogisms:

BARBARA
CELARENT
CESARE
CAMESTRES
CAMENES

An example of BARBARA (which is sub-prae or First Figure) would be:

All roses are flowers (A)
No flowers are trees (E)
Therefore, no trees are roses (E)

An example of CELARENT (First Figure) would be:

No flowers are trees (E)
All roses are flowers (A)
Therefore, no roses are trees (E)

An example of CESARE (a Second Figure or prae-prae syllogism) would be:

No trees are flowers (E)
All roses are flowers (A)
Therefore, no roses are trees (E)

An example of CAMESTRES (Second Figure) would be:

All roses are flowers (A)
No trees are flowers (E)
Therefore, no trees are roses (E)

An example of CAMENES (a Fourth Figure or prae-sub syllogism) would be:

All roses are flowers (A)
No flowers are trees (E)
Therefore, no trees are roses (E)

Note also that the final letter is important in determining the syllogism's validity, although it does not determine the mood.

Summary. This chapter concerns the mood of syllogisms. The mood of a syllogism is defined as the disposition of the premises according to quantity and quality. There are 16 moods per figure. Since there are four figures, that means there are 64 moods in all. Of these moods, only 19 are valid.

William of Shyreswood came up with names to help remember the valid syllogisms in a mnemonic verse. The verse is as follows:

BARBARA, CELARENT, DARII, FERIO quo prioris;
CESARE, CAMESTRES, FESTINO, BAROCO secundae;
tertia: DARAPTI, DISAMIS, DATISI, FELAPTON, BOCARDO,
FERISON habet: quarta insuper addit.
BRAMANTIP, CAMENES, DIMARIS, FESAPO, FRESISON.

The vowels in each of these names indicate the mood of the syllogism by indicating whether each proposition in the syllogism is an A, I, E, or O statement.

Of the 19 valid syllogisms, only five are commonly encountered in actual argument. The five common syllogisms are as follows:

BARBARA
CELARENT
CESARE
CAMESTRES
CAMENES