

## Why Standard Form Matters

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A categorical syllogism is said to be in standard form<sup>1</sup> when (1) all three of its component propositions are in standard form and (2) the major premise (defined as the premise that contains the major term) is listed first. The following categorical syllogism is *not* in standard form, since its major premise is listed second rather than first:

All S is M  
All M is P  
All S is P

Why does standard form matter? Specifically, why does the major premise have to be listed first? Is this just another requirement for students to memorize, perpetrated by sadistic professors, or is there a reason for it?

There's a reason for it. The reason is *not*, however (as might be thought), that validity depends on it. To say that an argument is valid is to say that it is truth-preserving. An argument is truth-preserving when it is logically impossible for its premises to be true and its conclusion false. Put differently, the premises of a valid argument jointly entail its conclusion. But the order in which premises are *listed* (spoken or written) has nothing to do with whether they jointly entail the conclusion. You can see this by using a Venn diagram. Diagramming the major premise first, followed by the minor premise, gives the same result as diagramming the minor premise first, followed by the major premise. The order of exposition is irrelevant to validity.

The reason standard form matters has to do not with validity but with one of the *methods* by which validity is *ascertained*. Of the 256 standard-form categorical syllogisms (AAA-1 through OOO-4), 15 (5.8%) are valid. There are so few valid syllogisms that they can be memorized. Here is a list of the valid ones, using their moods and

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1. See, e.g., Irving M. Copi and Carl Cohen, *Introduction to Logic*, 12th ed. (Upper Saddle River, NJ: Pearson Prentice Hall, 2005), 218.

figures:

AAA-1, EAE-1, AII-1, EIO-1, AEE-2, EAE-2, AOO-2, EIO-2,  
AII-3, IAI-3, EIO-3, OAO-3, AEE-4, IAI-4, EIO-4

Let's reconstruct the first syllogism on the list, the so-called Barbara syllogism. It looks like this:

All M is P  
All S is M  
All S is P

Suppose we switched the premises of this syllogism, listing the minor premise first and the major premise second. We get this:

All S is M  
All M is P  
All S is P

What is the mood and figure of this non-standard-form syllogism? It is AAA-4. But "AAA-4" does not appear on the list of 15 valid syllogisms. (See for yourself.) If we had committed the list to memory and consulted it (perhaps by constructing a poem, as was done in the Middle Ages), we would have concluded that this syllogism is invalid. In fact, it is valid.

There are two things we can do to avoid this unfortunate result. First, we can forget about standard form altogether and expand the list of valid syllogisms. The new list would be longer than the original, for it would include "AAA-4" and several other syllogisms in addition to the original 15.<sup>2</sup> Second, we can retain the original list of 15 valid syllogisms but insist that a syllogism be put into standard form before consulting the list. Since it's easy to put syllogisms into standard form, the second strategy is more attractive than the first. This, and not (as you probably thought) a desire to make students learn

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2. To be precise, the new list would contain the 15 syllogisms on the original list, plus the following, for a total of 22: AAA-4, IEO-4, OAO-2, IEO-2, IEO-3, AOO-3, and IEO-1. I don't know about you, but I'd rather memorize 15 moods and figures than 22!

the concept of standard form for its own sake, is why standard form matters. It matters because it facilitates the use of one of the methods (namely, memorization) by which validity is ascertained.