

## Noncategorical Syllogisms in the *Analytics*

GEORGE ENGLEBRETSSEN

It is a commonplace now among logicians that the logic of categorical syllogisms, first developed by Aristotle, presupposes the now-familiar logic of unanalyzed propositions. Aristotle, however, clearly took the syllogistic to be "basic logic", presupposing *no* other logic. Since he was not unaware of many important principles now constitutive of the calculus of propositions, it can only be argued that either: (i) Aristotle was blind to the import of such principles for formal logic in general, or (ii) he believed such principles could be accounted for by the syllogistic. In spite of the numerous and illustrious supporters of (i), we shall attempt here a brief defense of (ii).

The question, of course, is not whether Aristotle himself substantiated (ii), but rather: can any syllogistic substantiate (ii)? In answering this question affirmatively we will first cite several arguments which are found in the *Analytics*, and which make use of well-known principles of the propositional calculus. We shall then make some historical remarks concerning the attempt to reduce the logic of unanalyzed propositions to the logic of analyzed propositions (the syllogistic). Finally, we hope to show how a recently developed syllogistic system offers a technique which can be used to successfully render the arguments cited from the *Analytics* as categorical syllogisms.

*I* The first argument is from *Prior Analytics*, 34a6-7.

(1) . . . if when *A* is, *B* must be, then if *A* is possible, *B* must necessarily be possible.

The next two arguments are found together at *Prior Analytics*, 53b 12-15.

(2) If, when *A* is, *B* must be, then if *B* is not, *A* cannot be.

(3) Therefore, if *A* is true, *B* must be true.