

Logic Notes #11

Aristotelian Logic: Invalidity in Categorical Syllogisms

Preliminary—the concept of distribution

a term is distributed in a proposition if the proposition says something about all the individuals named by the term

some terms are distributed in some propositions; some are not

whether a term is distributed in a given proposition depends on the type of proposition

concretely

universal propositions distribute their subjects

negative propositions distribute their predicates

so,

A-propositions distribute their subjects only

E-propositions distribute both their subjects and their predicates

I-propositions distribute neither their subjects nor their predicates

O-propositions distribute their predicates only

All invalid syllogisms violate one of these rules

NB: The particularity rules are redundant. Any syllogism that violates those rules must violate one other rule as well.

Kind of Rule	Basic Rule	Corollaries
Negativity	The number of negative conclusions must <i>equal</i> the number of negative premises.	No syllogism can have two negative premises.
		Any syllogism with a negative premise must have a negative conclusion.
		Any syllogism with a negative conclusion must have a negative premise .
Particularity	The number of particular conclusions <i>may not be less than</i> the number of particular premises.	No syllogism can have two particular premises.
		Any syllogism with a particular premise must have a particular conclusion.
Distribution in Conclusion	Any term that is distributed in the conclusion must be distributed in the premises.	
Distribution in Premises	The middle term must be distributed in at least one premise.	