

Four Forms of Categorical Propositions

A: All Fs are Gs. $\forall x(Fx \rightarrow Gx)$

E: No Fs are Gs. $\forall x(Fx \rightarrow \sim Gx)$

I: Some Fs are Gs. $\exists x(Fx \wedge Gx)$

O: Some Fs are not Gs. $\exists x(Fx \wedge \sim Gx)$

Contradictories: Cannot both be true and cannot both be false.

Contraries: Cannot both be true but may both be false.

Subcontraries: Cannot both be false but may both be true.

(Aristotle, *De Interpretatione*, Book 7)

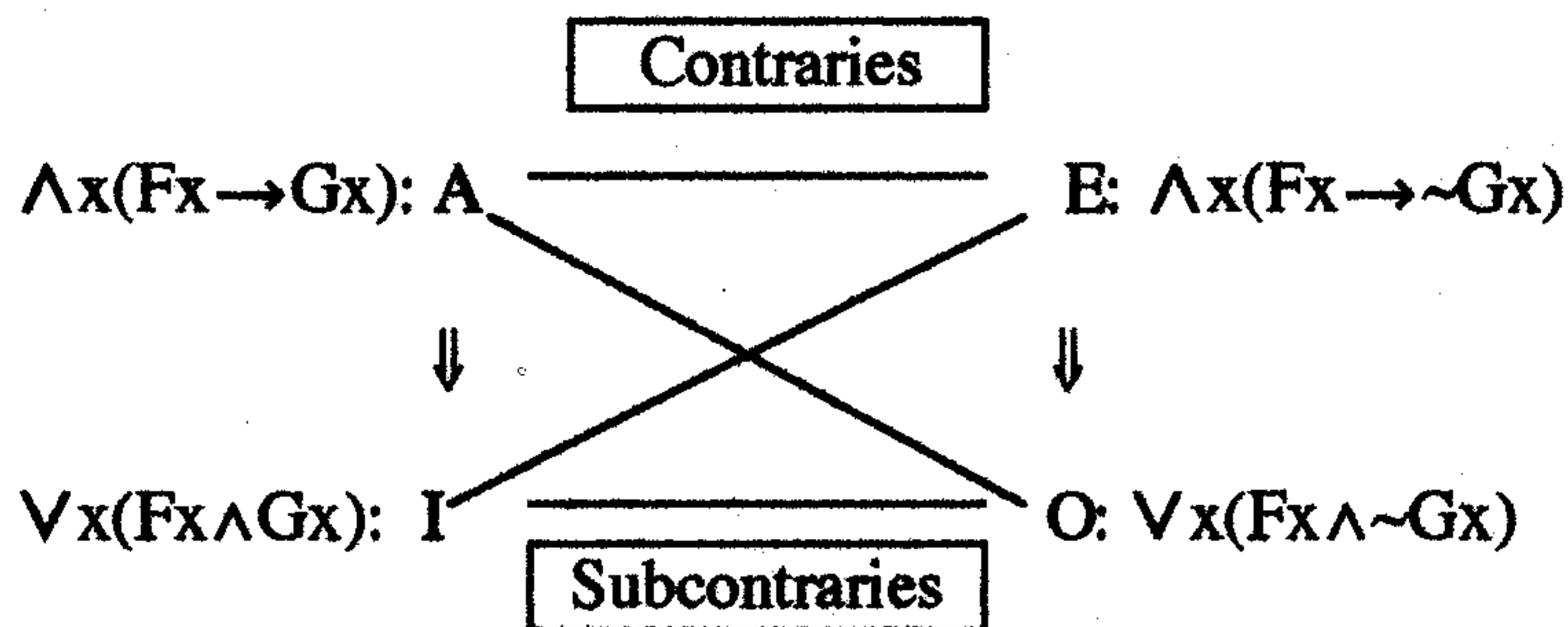
(N.B. If P and Q are contraries, then $\sim P$ and $\sim Q$ are subcontraries, and vice versa.)

Exs. Everyone is happy. Someone is not happy.
Contradictories.

This piece of chalk is red. This (same) piece of chalk is blue.
Contraries

Some will pass. Some will not pass.
Subcontraries.

Square of Opposition (Assumes that $\forall x Fx$)



where  diagonals connect contradictories (even if $\sim \forall x Fx$)