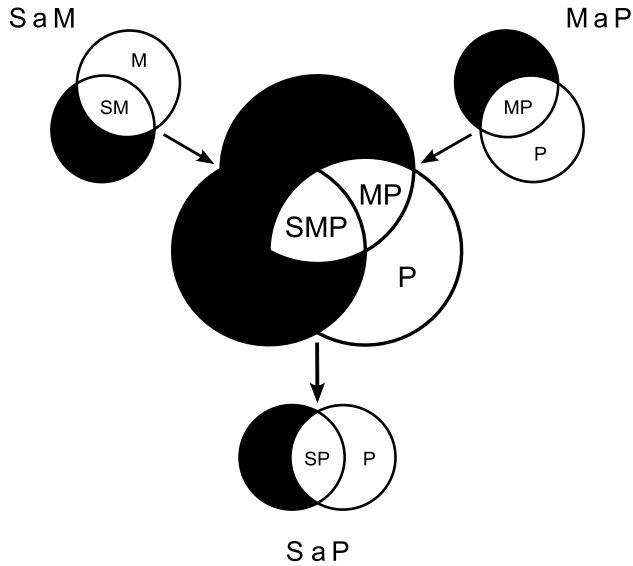
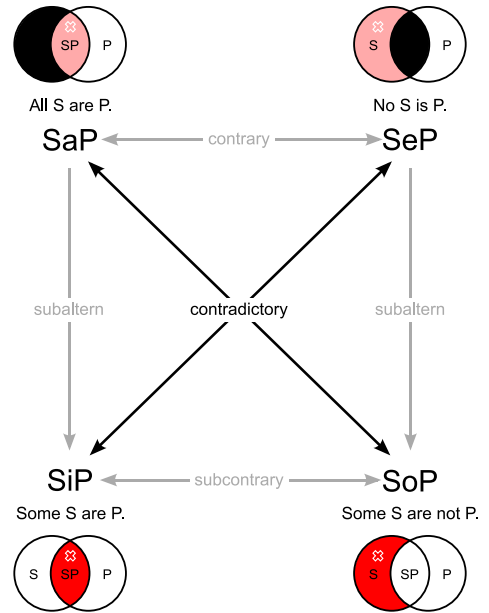


AAA-1 Modus Barbara

$\overline{\exists x: Mx \wedge Px}$ MaP All M are P,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SaM and all S are M;
 $\Rightarrow \overline{\exists x: Sx \wedge Px}$ SaP thus all S are P.

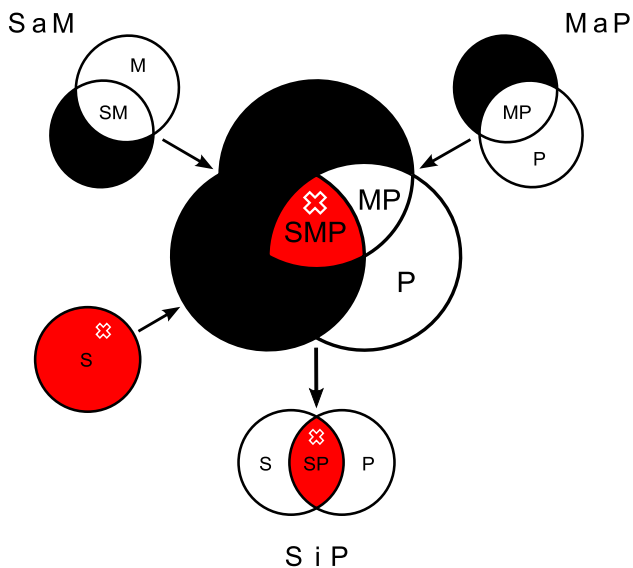


Square of opposition:



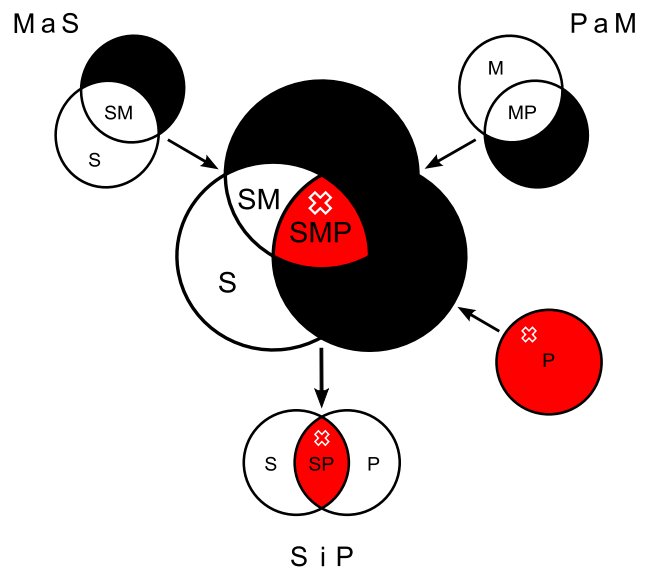
AAI-1 Modus Barbari

$\overline{\exists x: Mx \wedge Px}$ MaP All M are P,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SaM and all S are M,
 $\wedge \exists x: Sx$ and some S exist;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



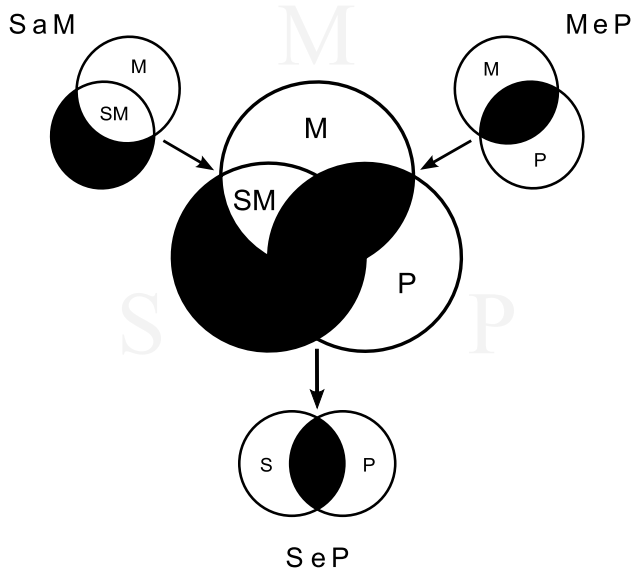
AAI-4 Modus Bamalip

$\overline{\exists x: Px \wedge Mx}$ PaM All P are M,
 $\wedge \overline{\exists x: Mx \wedge Sx}$ MaS and all M are S,
 $\wedge \exists x: Px$ and some P exist;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



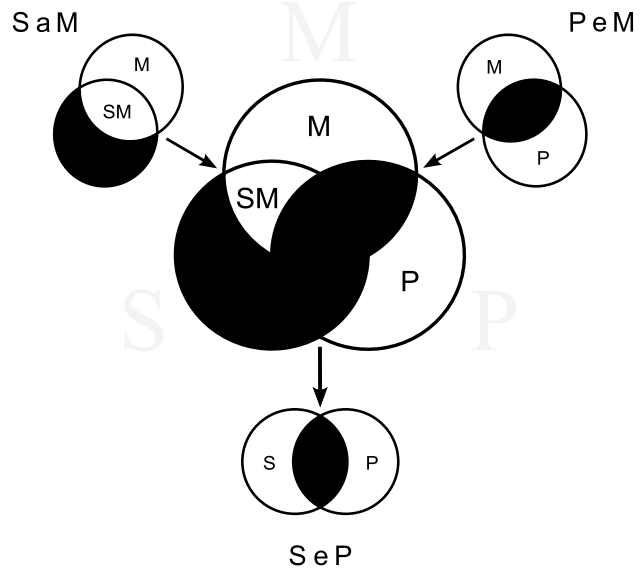
EAE-1 Modus Celarent

$\overline{\exists x: Mx \wedge Px}$ MeP No M is P,
 $\wedge \overline{\exists x: Sx \wedge \overline{Mx}}$ SaM and all S are M;
 $\Rightarrow \overline{\exists x: Sx \wedge Px}$ SeP thus no S is P.



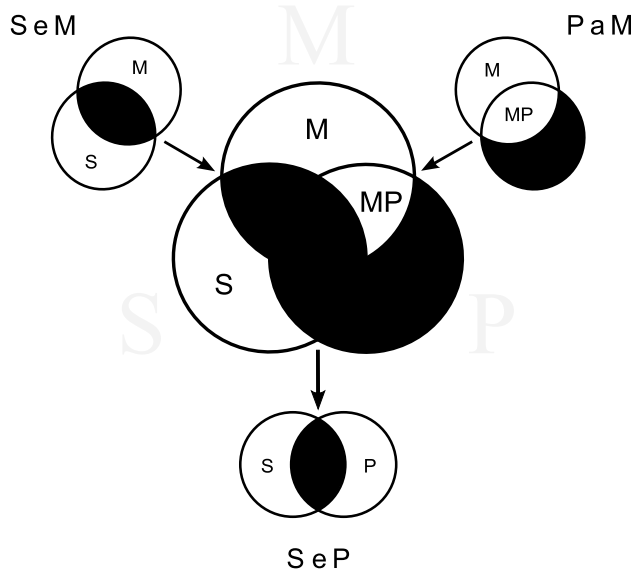
EAE-2 Modus Cesare

$\overline{\exists x: Px \wedge Mx}$ PeM No P is M,
 $\wedge \overline{\exists x: Sx \wedge \overline{Mx}}$ SaM and all S are M;
 $\Rightarrow \overline{\exists x: Sx \wedge Px}$ SeP thus no S is P.



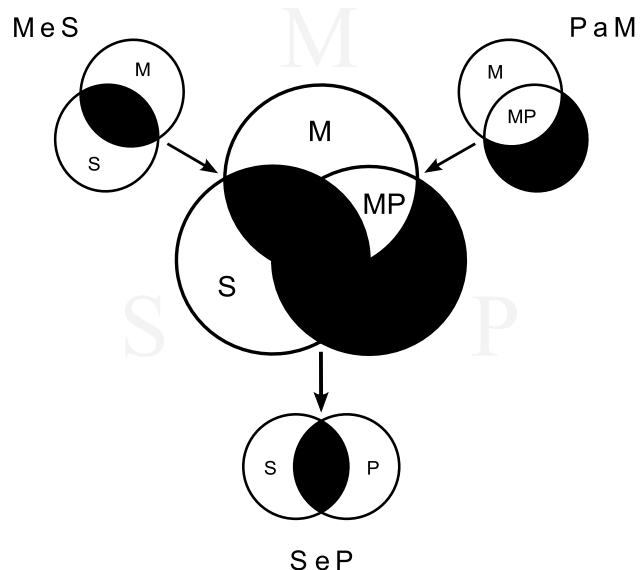
AEE-2 Modus Camestres

$\overline{\exists x: Px \wedge \overline{Mx}}$ PaM All P are M,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SeM and no S is M;
 $\Rightarrow \overline{\exists x: Sx \wedge Px}$ SeP thus no S is P.



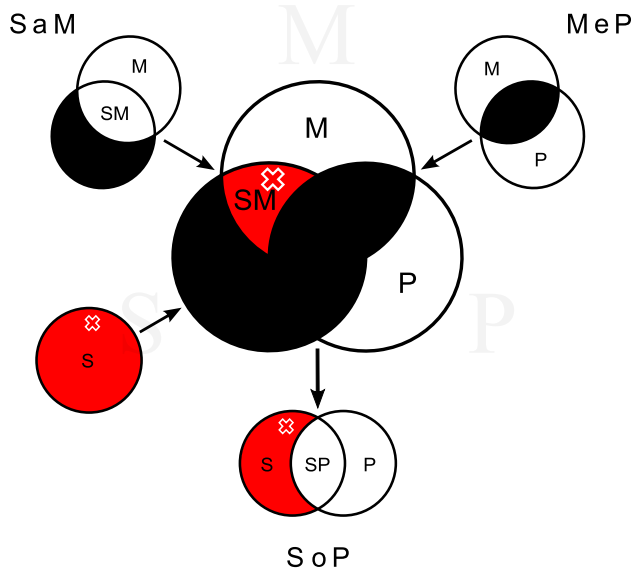
AEE-4 Modus Calemes

$\overline{\exists x: Px \wedge \overline{Mx}}$ PaM All P are M,
 $\wedge \overline{\exists x: Mx \wedge Sx}$ MeS and no M is S;
 $\Rightarrow \overline{\exists x: Sx \wedge Px}$ SeP thus no S is P.



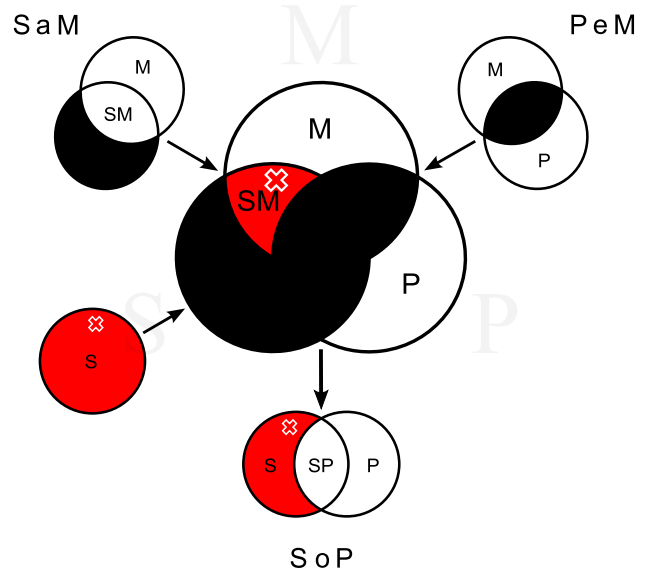
EAO-1 Modus Celaront

$\overline{\exists x: Mx \wedge Px}$ MeP No M is P,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SaM and all S are M,
 $\wedge \exists x: Sx$ and some S exist;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



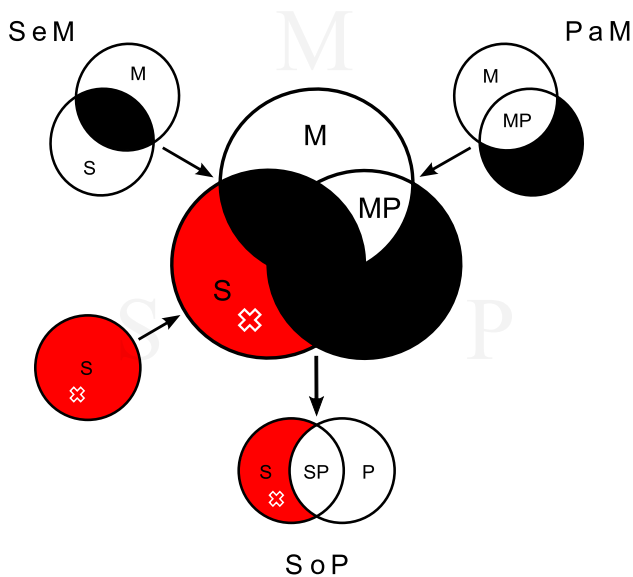
EAO-2 Modus Cesaro

$\overline{\exists x: Px \wedge Mx}$ PeM No P is M,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SaM and all S are M,
 $\wedge \exists x: Sx$ and some S exist;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



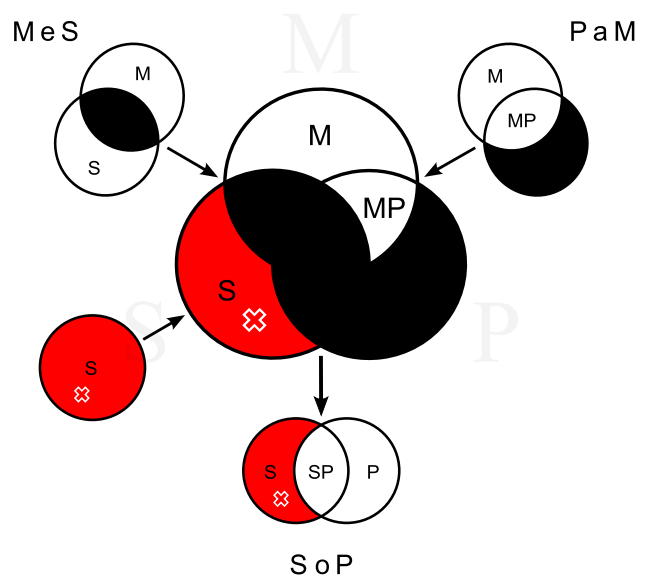
AEO-2 Modus Camestros

$\overline{\exists x: Px \wedge \overline{Mx}}$ PaM All P are M,
 $\wedge \overline{\exists x: Sx \wedge Mx}$ SeM and no S is M,
 $\wedge \exists x: Sx$ and some S exist;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



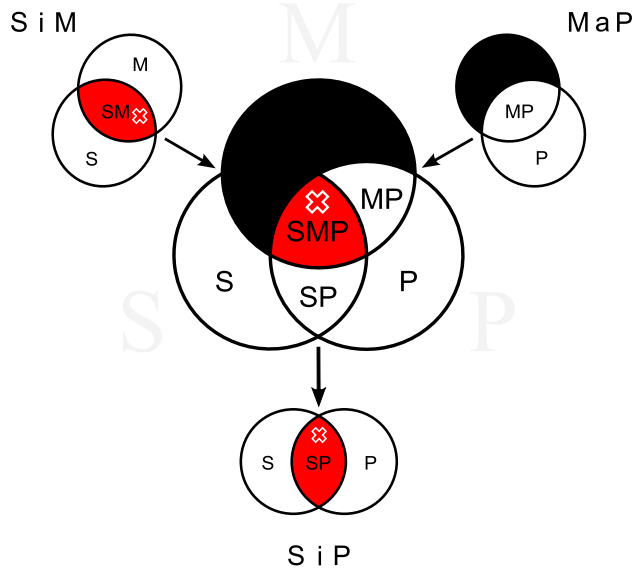
AEO-4 Modus Calemos

$\overline{\exists x: Px \wedge \overline{Mx}}$ PaM All P are M,
 $\wedge \overline{\exists x: Mx \wedge Sx}$ MeS and no M is S;
 $\wedge \exists x: Sx$ and some S exist;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



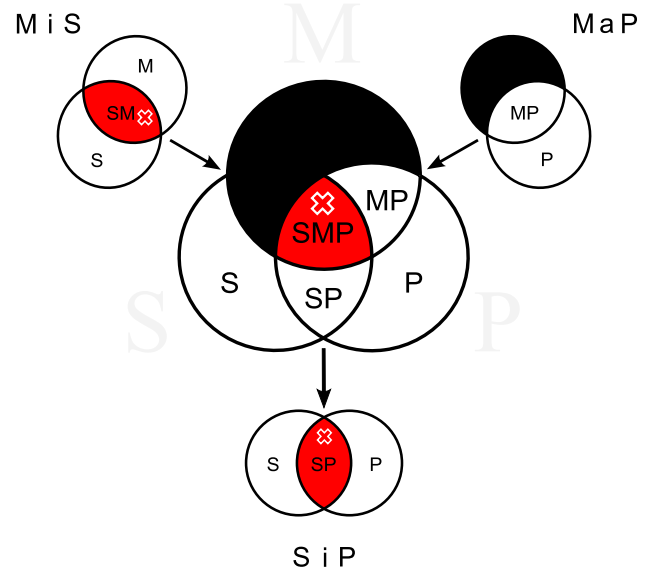
All-1 Modus Darii

$\overline{\exists x: Mx \wedge \overline{Px}}$ MaP All M are P,
 $\wedge \exists x: Sx \wedge Mx$ SiM and some S are M;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



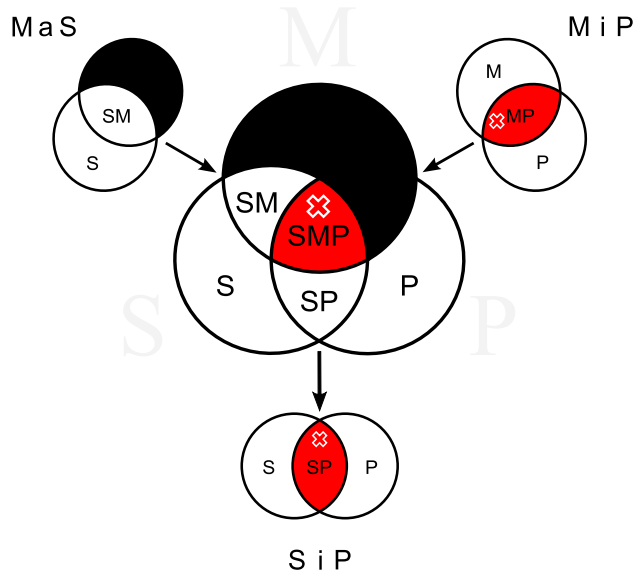
All-3 Modus Datisi

$\overline{\exists x: Mx \wedge \overline{Px}}$ MaP All M are P,
 $\wedge \exists x: Mx \wedge Sx$ MiS and some M are S;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



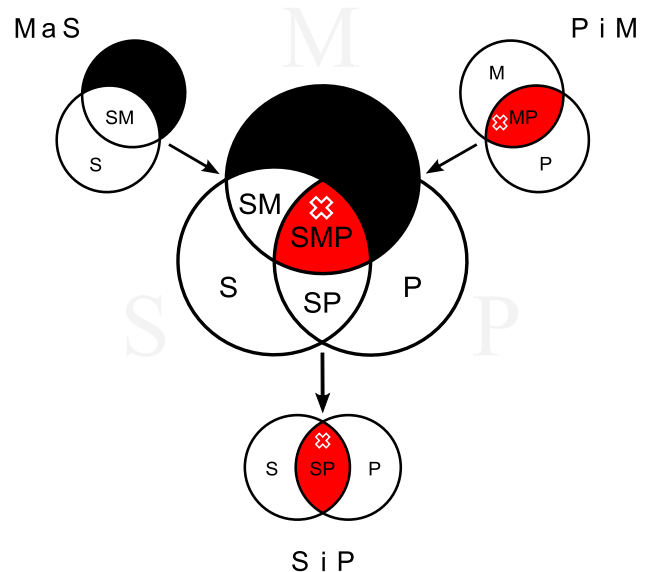
IAI-3 Modus Disamis

$\exists x: Mx \wedge Px$ MiP Some M are P,
 $\wedge \overline{\exists x: Mx \wedge \overline{Sx}}$ MaS and all M are S;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



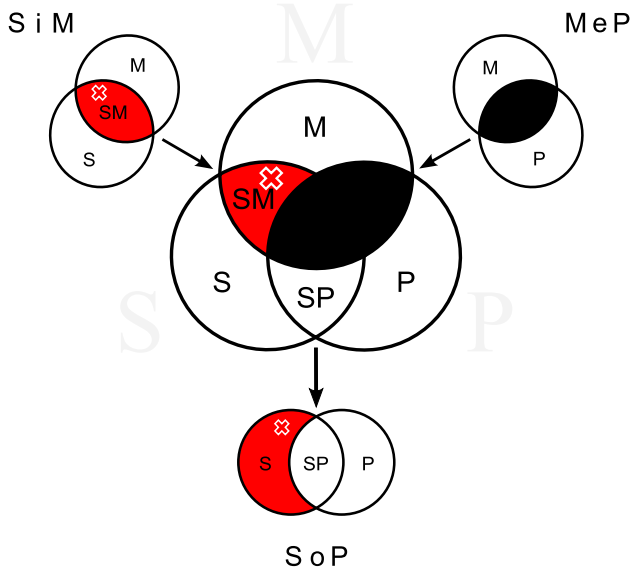
IAI-4 Modus Dimatis

$\exists x: Px \wedge Mx$ PiM Some P are M,
 $\wedge \overline{\exists x: Mx \wedge \overline{Sx}}$ MaS and all M are S;
 $\Rightarrow \exists x: Sx \wedge Px$ SiP thus some S are P.



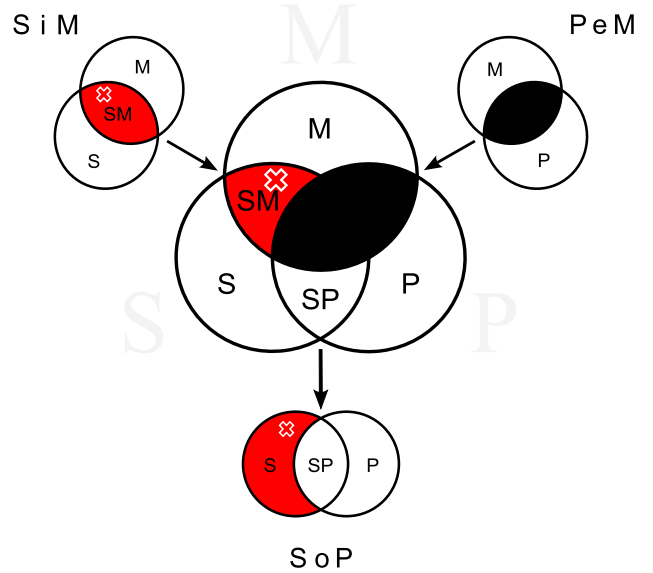
EIO-1 Modus Ferio

$\overline{\exists x: Mx \wedge Px}$ MeP No M is P,
 $\wedge \exists x: Sx \wedge Mx$ SiM and some S are M;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



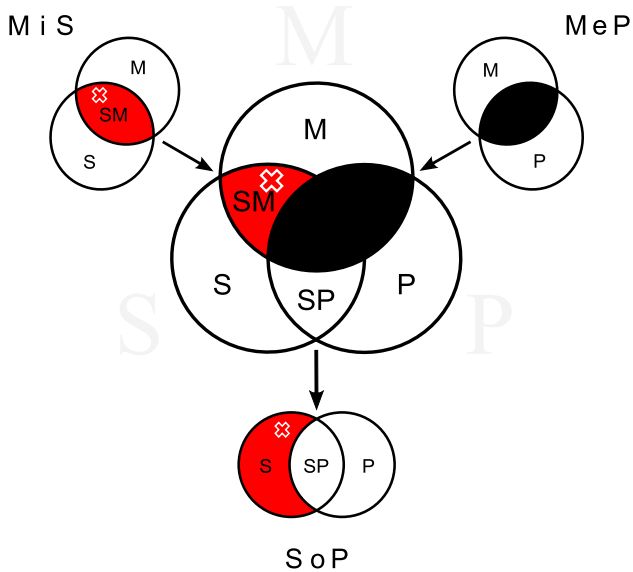
EIO-2 Modus Festino

$\overline{\exists x: Px \wedge Mx}$ PeM No P is M,
 $\wedge \exists x: Sx \wedge Mx$ SiM and some S are M;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



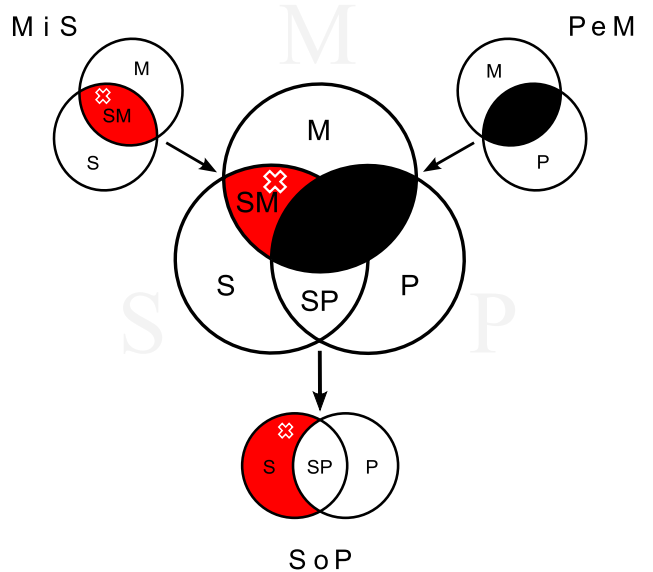
EIO-3 Modus Ferison

$\overline{\exists x: Mx \wedge Px}$ MeP No M is P,
 $\wedge \exists x: Mx \wedge Sx$ MiS and some M are S;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



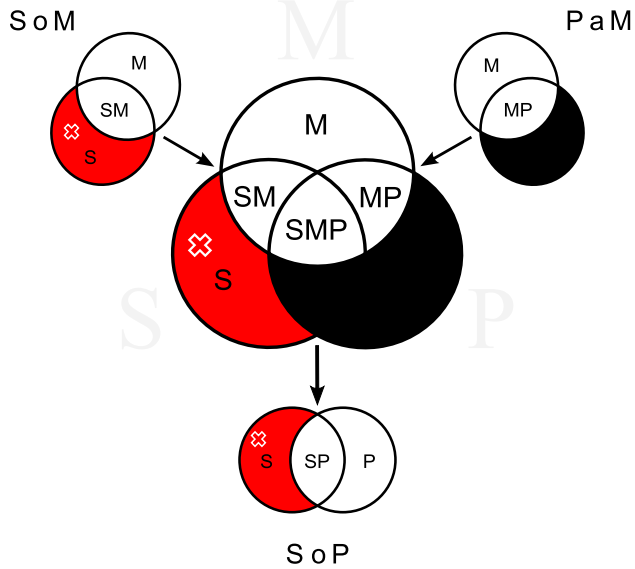
EIO-4 Modus Fresison

$\overline{\exists x: Px \wedge Mx}$ PeM No P is M,
 $\wedge \exists x: Mx \wedge Sx$ MiS and some M are S;
 $\Rightarrow \exists x: Sx \wedge \overline{Px}$ SoP thus some S are not P.



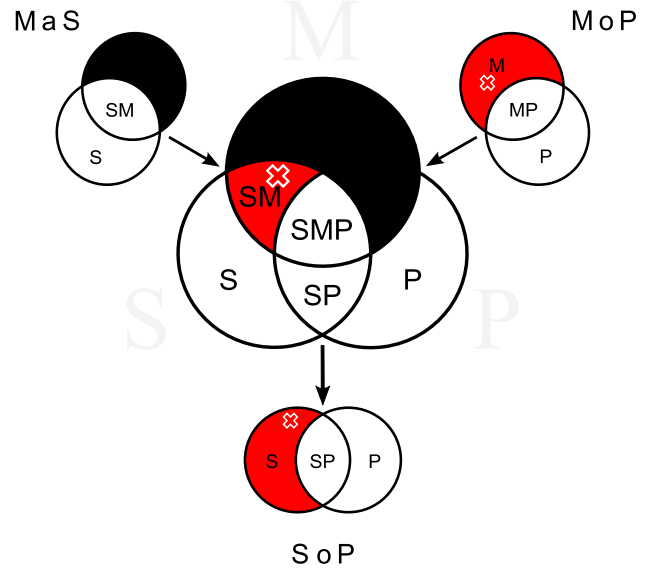
AOO-2 Modus Baroco

$\overline{\exists x: P x \wedge M x}$ PaM All P are M,
 $\wedge \exists x: S x \wedge \overline{M x}$ SoM and some S are not M;
 $\Rightarrow \exists x: S x \wedge \overline{P x}$ SoP thus some S are not P.



AOO-3 Modus Bocardo

$\exists x: M x \wedge \overline{P x}$ MoP Some M are not P,
 $\wedge \exists x: M x \wedge S x$ MaS and all M are S;
 $\Rightarrow \exists x: S x \wedge \overline{P x}$ SoP thus some S are not P.

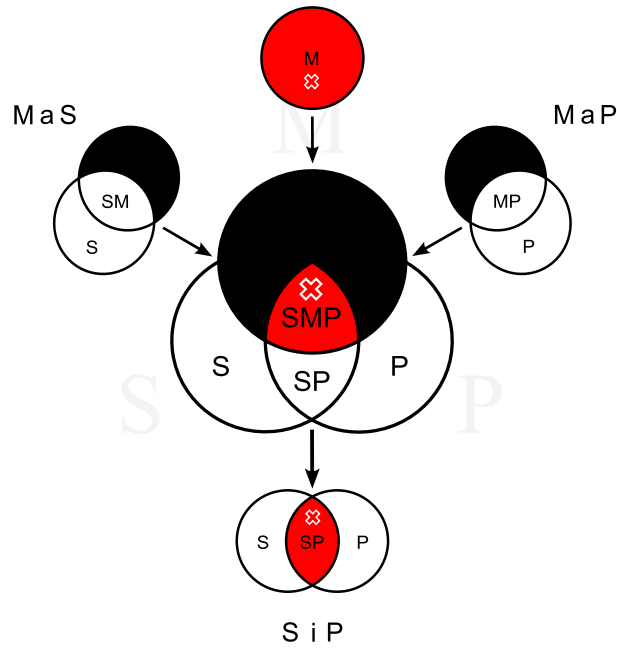


Venn diagrams are easily transformed into Euler diagrams:



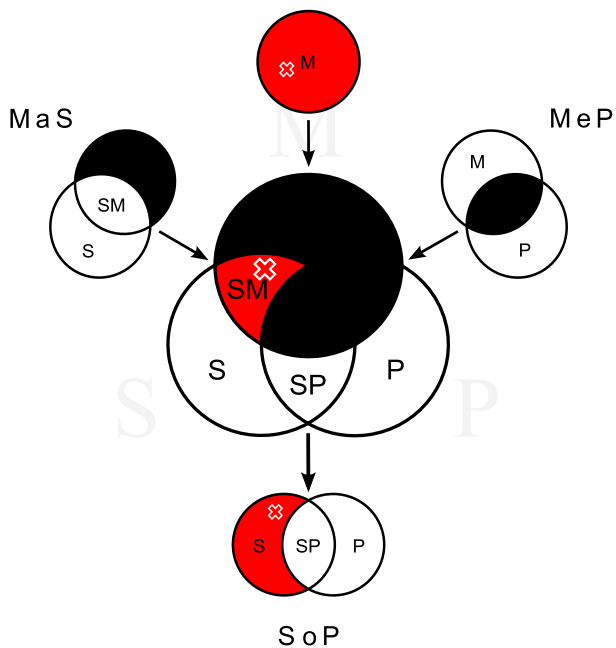
AAI-3 Modus Darapti

$\overline{\exists x: Mx \wedge \overline{Px}}$	MaP	All M are P,
$\wedge \overline{\exists x: Mx \wedge \overline{Sx}}$	MaS	and all M are S,
$\wedge \exists x: Mx$		and some M exist;
$\Rightarrow \exists x: Sx \wedge Px$	SiP	thus some S are P.



EAO-3 Modus Felapton

$\overline{\exists x: Mx \wedge Px}$	MeP	No M is P,
$\wedge \overline{\exists x: Mx \wedge \overline{Sx}}$	MaS	and all M are S,
$\wedge \exists x: Mx$		and some M exist;
$\Rightarrow \exists x: Sx \wedge \overline{Px}$	SoP	thus some S are not P.



EAO-4 Modus Fesapo

$\overline{\exists x: Px \wedge Mx}$	PeM	No P is M,
$\wedge \overline{\exists x: Mx \wedge \overline{Sx}}$	MaS	and all M are S,
$\wedge \exists x: Mx$		and some M exist;
$\Rightarrow \exists x: Sx \wedge \overline{Px}$	SoP	thus some S are not P.

