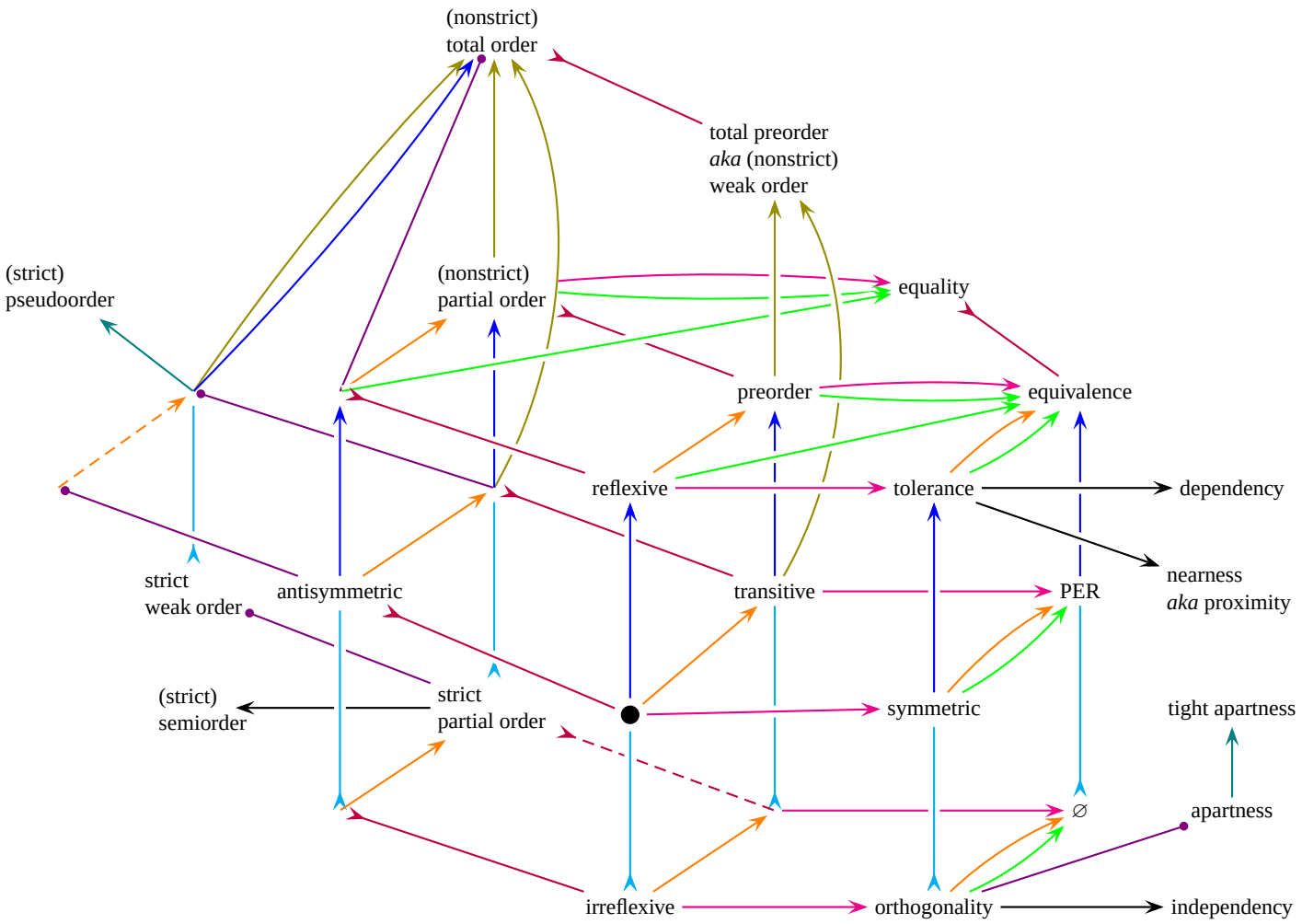
	positive	weak negative	strong negative	anti
reflexive	$\forall x.\ xRx$	$\neg\forall x.\ xRx$	$\exists x.\ \neg(xRx)$	$\forall x.\ \neg(xRx)$
co-reflexive	$\forall x,y.\ xRy \Rightarrow x=y$			
(right) shift-reflexive	$\forall x,y.\ xRy \Rightarrow yRy$			
quasi-reflexive	$\forall x,y.\ xRy \vee yRx \Rightarrow xRx$			
(weak) symmetric	$\forall x,y.\ x\neq y \wedge xRy \Rightarrow yRx$	$\neg\forall x,y.\ xRy \Rightarrow yRx$	$\exists x,y.\ xRy \wedge \neg(yRx)$	$\forall x,y.\ x\neq y \wedge xRy \Rightarrow \neg(yRx)$
(strong) symmetric	$\forall x,y.\ xRy \Rightarrow yRx$	$\neg\forall x,y.\ x\neq y \wedge xRy \Rightarrow yRx$	$\exists x,y.\ x\neq y \wedge xRy \wedge \neg(yRx)$	$\forall x,y.\ xRy \wedge yRx \Rightarrow x=y$
transitive	$\forall x,y,z.\ xRy \wedge yRz \Rightarrow xRz$	$\neg\forall x,y,z.\ xRy \wedge yRz \Rightarrow xRz$	$\exists x,y,z.\ xRy \wedge yRz \wedge \neg(xRz)$	$\forall x,y,z.\ xRy \wedge yRz \Rightarrow \neg(xRz)$
comparison, *aka* co-transitive	$\forall x,y,z.\ xRz \Rightarrow xRy \vee yRz$			
dense, *aka* op-transitive	$\forall x,z.\ xRz \Rightarrow \exists y.\ xRy \wedge yRz$			
(right) Euclidean	$\forall x,y,z.\ xRy \wedge xRz \Rightarrow yRz$			
left Euclidean	$\forall x,y,z.\ yRx \wedge zRx \Rightarrow yRz$			
functional, *aka* right-unique	$\forall x,y,z.\ xRy \wedge xRz \Rightarrow y=z$			
injective, *aka* left-unique	$\forall x,y,z.\ yRx \wedge zRx \Rightarrow y=z$			
surjective, *aka* right-total	$\forall y.\ \exists x.\ xRy$			
entire, *aka* serial, *aka* left-total	$\forall x.\ \exists y.\ xRy$			
total	$\forall x,y.\ xRy \vee yRx$			
connected, *aka* tight (apartness)	$\forall x,y.\ \neg(xRy \vee yRx) \Rightarrow x=y$			
strongly connected	$\forall x,y.\ x\not\equiv y \Rightarrow xRy \vee yRx$			

co-reflexive $\Leftrightarrow$ strong symmetric $\wedge$ strong anti-symmetric
reflexive $\wedge$ Euclidean $\Rightarrow$ transitive $\wedge$ strong symmetric
strong symmetric $\Rightarrow$ (transitive $\Leftrightarrow$ Euclidean)
strong symmetric $\wedge$ transitive $\Rightarrow$ (entire $\Leftrightarrow$ reflexive)
reflexive $\Rightarrow$ entire
transitive $\wedge$ irreflexive $\Rightarrow$ weak anti-symmetric
transitive $\wedge$ irreflexive $\Rightarrow_{\mathbb{I}}$ strong anti-symmetric
co-transitive $\Rightarrow$ (reflexive $\Leftrightarrow$ total)
total $\Rightarrow$ reflexive
total $\Rightarrow_{\mathbb{I}}$ connected
co-transitive $\wedge$ strong anti-symmetric $\Rightarrow$ transitive
total $\wedge$ transitive $\Rightarrow$ co-transitive
shift-reflexive $\Rightarrow$ dense



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