$termvar,\ x,\ y$ term variable

$index,\ i,\ j,\ k$

$term,\ t,\ r,\ s,\ n$	::=		term
	|	x	variable
	|	contra	
	|	$\lambda x : T.t$	unary functions
	|	$t_1\ t_2$	function application
	|	$\text{unbox}_\square\ t$	
	|	$\text{unbox}_\blacksquare\ t$	
	|	$\square\ t$	past necessity functor
	|	$\lozenge\ t$	past possibility functor
	|	$\blacksquare\ t$	necessity functor
	|	$\blacklozenge\ t$	possibility functor
	|	$\text{adj}_\mathsf{R}\ \blacklozenge y = x\ \text{in}\ \square t$	
	|	$\text{adj}_\mathsf{L}\ \blacklozenge y = x\ \text{in}\ t$	
	|	$\text{let}_\square\ \Gamma\ \text{be}\ t_1\ \text{in}\ t_2$	past necessity elim
	|	$\text{let}_\blacksquare\ \Gamma\ \text{be}\ t_1\ \text{in}\ t_2$	past necessity elim
	|	$\text{let}\ \lozenge x : A = s\ \|\ \Gamma\ \text{be}\ t_1\ \text{in}\ t_2$	
	|	$\text{let}\ \blacklozenge x : A = s\ \|\ \Gamma\ \text{be}\ t_1\ \text{in}\ t_2$	
	|	(t) S	

$form,\ type,\ A,\ B,\ C,\ T$	::=		formula and type
	|	$\bot$	false or the empty type
	|	$\square\ A$	past necessity
	|	$\blacksquare\ A$	necessity
	|	$\lozenge\ A$	past possibility
	|	$\blacklozenge\ A$	possibility
	|	$A \to B$	implication

$\Gamma,\ \Delta$	::=		type context
	|	$\emptyset$	empty context
	|	A	formula el
	|	$x : T$	typed el
	|	Γ, Γ'	append

$\boxed{\Gamma \vdash t : A}$

$$\frac{}{\Gamma, x : A \vdash x : A}\ \text{TY\_AX}$$

$$\frac{}{\Gamma, x : \bot\ \vdash\ \text{contra} : A}\ \text{TY\_FALSE}$$

$$\frac{\Gamma, x : A \vdash t : B}{\Gamma \vdash \lambda x : A.t : A \to B}\ \text{TY\_IMP}\mathrm{I}$$

$$\frac{\Gamma \vdash t_1 : A \to B \quad \Gamma \vdash t_2 : A}{\Gamma \vdash t_1\ t_2 : B}\ \text{TY\_IMP}\mathrm{E}$$

$$\frac{\Gamma \vdash t : \square\ B}{\Gamma \vdash \text{unbox}_\square\ t : B}\ \text{TY\_BOX}\mathrm{E}$$

$$\frac{\Gamma \vdash t_1 : \square\ A_1, ..., \Gamma \vdash t_k : \square\ A_k \quad x_1 : \square\ A_1, ..., x_k : \square\ A_k \vdash t : B}{\Gamma \vdash \text{let}_\square\ x_1 : \square\ A_1, ..., x_k : \square\ A_k\ \text{be}\ t_1, ..., t_k\ \text{in}\ t : \square\ B}\ \text{TY\_BOX}\mathrm{I}$$

$$\frac{\Gamma \vdash t : \blacksquare B}{\Gamma \vdash \mathsf{unbox}_\blacksquare \; t : B} \quad \text{TY\_BBOX}\text{E}$$

$$\frac{\Gamma \vdash t_1 : \blacksquare A_1, \; ..., \Gamma \vdash t_k : \blacksquare A_k \quad x_1 : \blacksquare A_1, \; ..., x_k : \blacksquare A_k \vdash t : B}{\Gamma \vdash \mathsf{let}_\blacksquare \; x_1 : \blacksquare A_1, \; ..., x_k : \blacksquare A_k \; \mathsf{be} \; t_1, \; ..., t_k \; \mathsf{in} \; t : \blacksquare B} \quad \text{TY\_BBOX}\text{I}$$

$$\boxed{\Gamma \vdash t_1 \approx t_2 : A}$$

$$\frac{\Gamma, x : A \vdash t_2 \approx s_2 : B \quad \Gamma \vdash t_1 \approx s_1 : A}{\Gamma \vdash (\lambda x : A.t_2) \; t_1 \approx [s_1/x]s_2 : B} \quad \text{EQ\_BETA}$$

$$\frac{\Gamma \vdash t_1 \approx s_1 : \square A_1, \; ..., \Gamma \vdash t_k \approx s_k : \square A_k \quad x_1 : \square A_1, \; ..., x_k : \square A_k \vdash t \approx s : B}{\Gamma \vdash \mathsf{unbox}_\square \; (\mathsf{let}_\square \; x_1 : \square A_1, \; ..., x_k : \square A_k \; \mathsf{be} \; t_1, \; ..., t_k \; \mathsf{in} \; t) \approx [s_1/x_1] \, ... \, [s_k/x_k]s : B} \quad \text{EQ\_UNBOX}$$

$$\frac{\Gamma \vdash t_1 \approx s_1 : \blacksquare A_1, \; ..., \Gamma \vdash t_k \approx s_k : \blacksquare A_k \quad x_1 : \blacksquare A_1, \; ..., x_k : \blacksquare A_k \vdash t \approx s : B}{\Gamma \vdash \mathsf{unbox}_\blacksquare \; (\mathsf{let}_\blacksquare \; x_1 : \blacksquare A_1, \; ..., x_k : \blacksquare A_k \; \mathsf{be} \; t_1, \; ..., t_k \; \mathsf{in} \; t) \approx [s_1/x_1] \, ... \, [s_k/x_k]s : B} \quad \text{EQ\_UNBBOX}$$

$$\frac{\Gamma \vdash t : A}{\Gamma \vdash t \approx t : A} \quad \text{EQ\_REFL}$$

$$\frac{\Gamma \vdash t_2 \approx t_1 : A}{\Gamma \vdash t_1 \approx t_2 : A} \quad \text{EQ\_SYM}$$

$$\frac{\Gamma \vdash t_1 \approx t_2 : A \quad \Gamma \vdash t_2 \approx t_3 : A}{\Gamma \vdash t_1 \approx t_3 : A} \quad \text{EQ\_TRANS}$$

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Definition rules:        14 good     0 bad
Definition rule clauses: 26 good     0 bad
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