x	term variable
α	type variable
T	type constructor
c	coercion variable

t	$::=$		term
	$\|$	x	variable
	$\|$	$\lambda(x : \tau) \Rightarrow t$	abstraction
	$\|$	$\lambda\{\alpha : \kappa\} \Rightarrow t$	type abstraction
	$\|$	$\lambda\{c : \tau_1 \sim \tau_2\} \Rightarrow t$	coercion abstraction
	$\|$	$t_1\, t_2$	application
	$\|$	$t\ [\tau]$	type application
	$\|$	$t\ \sim[\gamma]$	coercion application
	$\|$	$t : \tau$	type annotation
	$\|$	$t \blacktriangleright \gamma$	coercion
κ	$::=$		kind
	$\|$	$*$	star
	$\|$	$\kappa_1 \to \kappa_2$	kind arrow
τ	$::=$		type
	$\|$	α	type variable
	$\|$	T	type constructor
	$\|$	$\tau_1 \to \tau_2$	$\equiv (\to)\ \tau_1\ \tau_2$
	$\|$	$\{\tau_1 \sim \tau_2\} \to \tau_3$	coercion arrow
	$\|$	$\lambda(\alpha : \kappa), \tau$	operator abstraction
	$\|$	$\forall\,(\alpha : \kappa), \tau$	universal quantification
	$\|$	$\tau_1\, \tau_2$	operator application
γ	$::=$		coercion proof term
	$\|$	c	variable
	$\|$	$\mathbf{refl}\, \tau$	reflexivity
	$\|$	$\mathbf{sym}\, \gamma$	symmetry
	$\|$	$\gamma_1 \circ \gamma_2$	composition
	$\|$	$\gamma_1 \to \gamma_2$	$\equiv (\to)\ \gamma_1\ \gamma_2$ where $(\to)$: refl $(\to)$
	$\|$	$\{\gamma_1 \sim \gamma_2\} \to \gamma_3$	coercion arrow introduction
	$\|$	$\lambda(\alpha : \kappa), \gamma$	operator abstraction introduction
	$\|$	$\forall\,(\alpha : \kappa), \gamma$	universal quantification introduction
	$\|$	$\gamma_1\, \gamma_2$	application introduction
	$\|$	$\mathbf{left}\, \gamma$	left elimination
	$\|$	$\mathbf{right}\, \gamma$	right elimination
Γ	$::=$		typing environment
	$\|$	$\emptyset$	empty
	$\|$	$\Gamma, x : \tau$	variable
	$\|$	$\Gamma, T : \kappa$	type constructor
	$\|$	$\Gamma, \alpha : \kappa$	type variable
	$\|$	$\Gamma, c : \tau_1 \sim \tau_2$	coercion variable
tv	$::=$		typed value
	$\|$	$\lambda(x : \tau) \Rightarrow t$	abstraction
	$\|$	$\lambda\{\alpha : \kappa\} \Rightarrow tv$	type abstraction

	$\mid$	$\lambda\{c : \tau_1 \sim \tau_2\} \Rightarrow tv$	coercion abstraction
	$\mid$	$tv\ [\tau]$	type application
	$\mid$	$tv\ {\sim}[\gamma]$	coercion application
	$\mid$	$tv : \tau$	type annotation
	$\mid$	$tv \blacktriangleright \gamma$	coercion
v	$::=$		value
	$\mid$	$\lambda x \Rightarrow t$	abstraction

Initial environment: $\Gamma = \emptyset, (\rightarrow) : * \rightarrow * \rightarrow *$

$\boxed{\Gamma \vdash t : \tau}$ Typing rules

$$\frac{x : \tau \in \Gamma}{\Gamma \vdash x : \tau}\ \text{T\_VAR}$$

$$\frac{\begin{array}{c}\Gamma, x : \tau_1 \vdash t : \tau_2 \\ \Gamma \vdash \tau_1 : *\end{array}}{\Gamma \vdash (\lambda(x : \tau_1) \Rightarrow t) : \tau_1 \rightarrow \tau_2}\ \text{T\_ABS}$$

$$\frac{\begin{array}{l}\alpha \notin \Gamma \\ \Gamma, \alpha : \kappa \vdash t : \tau\end{array}}{\Gamma \vdash (\lambda\{\alpha : \kappa\} \Rightarrow t) : \forall (\alpha : \kappa), \tau}\ \text{T\_TYABS}$$

$$\frac{\begin{array}{l}\Gamma, c : \tau_1 \sim \tau_2 \vdash t : \tau_3 \\ \Gamma \vdash \tau_1 : \kappa \\ \Gamma \vdash \tau_2 : \kappa\end{array}}{\Gamma \vdash \lambda\{c : \tau_1 \sim \tau_2\} \Rightarrow t : \{\tau_1 \sim \tau_2\} \rightarrow \tau_3}\ \text{T\_CABS}$$

$$\frac{\begin{array}{l}\Gamma \vdash t_1 : \tau_2 \rightarrow \tau_1 \\ \tau_2 \equiv \tau_2' \\ \Gamma \vdash t_2 : \tau_2'\end{array}}{\Gamma \vdash t_1\ t_2 : \tau_1}\ \text{T\_APP}$$

$$\frac{\begin{array}{l}\Gamma \vdash t : \forall (\alpha : \kappa), \tau_2 \\ \Gamma \vdash \tau_1 : \kappa \\ [\alpha \mapsto \tau_1]\ \tau_2 \triangleright \tau_2'\end{array}}{\Gamma \vdash t\ [\tau_1] : \tau_2'}\ \text{T\_TYAPP}$$

$$\frac{\begin{array}{l}\Gamma \vdash t : \{\tau_1 \sim \tau_2\} \rightarrow \tau_3 \\ \Gamma \vdash \gamma : \tau_1' \sim \tau_2' \\ \tau_1 \equiv \tau_1' \\ \tau_2 \equiv \tau_2'\end{array}}{\Gamma \vdash t\ {\sim}[\gamma] : \tau_3}\ \text{T\_CAPP}$$

$$\frac{\begin{array}{c}\Gamma \vdash t : \tau_2 \\ \tau_1 \equiv \tau_2\end{array}}{\Gamma \vdash (t : \tau_1) : \tau_1}\ \text{T\_ANNOT}$$

$$\frac{\begin{array}{l}\Gamma \vdash \gamma : \tau_1 \sim \tau_2 \\ \Gamma \vdash t : \tau_1' \\ \tau_1 \equiv \tau_1'\end{array}}{\Gamma \vdash (t \blacktriangleright \gamma) : \tau_2}\ \text{T\_COERCE}$$

$\boxed{\Gamma \vdash \gamma : \tau_1 \sim \tau_2}$ Coercion typing

$$\frac{c : \tau_1 \sim \tau_2 \ \in \Gamma}{\Gamma \vdash c : \tau_1 \sim \tau_2} \quad \textsc{C\_Var}$$

$$\frac{}{\Gamma \vdash \mathbf{refl}\, \tau : \tau \sim \tau} \quad \textsc{C\_Refl}$$

$$\frac{\Gamma \vdash \gamma : \tau_2 \sim \tau_1}{\Gamma \vdash \mathbf{sym}\, \gamma : \tau_1 \sim \tau_2} \quad \textsc{C\_Sym}$$

$$\frac{\begin{array}{l}\Gamma \vdash \gamma_1 : \tau_1 \sim \tau_2 \\ \tau_2 \equiv \tau_2' \\ \Gamma \vdash \gamma_2 : \tau_2' \sim \tau_3\end{array}}{\Gamma \vdash \gamma_1 \circ \gamma_2 : \tau_1 \sim \tau_3} \quad \textsc{C\_Comp}$$

$$\frac{\begin{array}{l}\Gamma \vdash \gamma_1 : \tau_1 \sim \tau_1' \\ \Gamma \vdash \gamma_2 : \tau_2 \sim \tau_2' \\ \Gamma \vdash \gamma_3 : \tau_3 \sim \tau_3' \\ \Gamma \vdash \{\tau_1 \sim \tau_2\} \to \tau_3 : *\end{array}}{\Gamma \vdash \{\gamma_1 \sim \gamma_2\} \to \gamma_3 : \{\tau_1 \sim \tau_2\} \to \tau_3 \sim \{\tau_1' \sim \tau_2'\} \to \tau_3'} \quad \textsc{C\_CArrow}$$

$$\frac{\begin{array}{l}\alpha \notin \Gamma \\ \Gamma, \alpha : \kappa \vdash \gamma : \tau_1 \sim \tau_2\end{array}}{\Gamma \vdash \lambda(\alpha : \kappa), \gamma : \lambda(\alpha : \kappa), \tau_1 \sim \lambda(\alpha : \kappa), \tau_2} \quad \textsc{C\_Abs}$$

$$\frac{\begin{array}{l}\alpha \notin \Gamma \\ \Gamma, \alpha : \kappa \vdash \gamma : \tau_1 \sim \tau_2 \\ \Gamma \vdash \forall\,(\alpha : \kappa), \tau_1 : *\end{array}}{\Gamma \vdash \forall\,(\alpha : \kappa), \gamma : \forall\,(\alpha : \kappa), \tau_1 \sim \forall\,(\alpha : \kappa), \tau_2} \quad \textsc{C\_Forall}$$

$$\frac{\begin{array}{l}\Gamma \vdash \gamma_1 : \tau_1 \sim \tau_1' \\ \Gamma \vdash \gamma_2 : \tau_2 \sim \tau_2' \\ \Gamma \vdash \tau_1\, \tau_2 : \kappa\end{array}}{\Gamma \vdash \gamma_1\, \gamma_2 : \tau_1\, \tau_2 \sim \tau_1'\, \tau_2'} \quad \textsc{C\_App}$$

$$\frac{\Gamma \vdash \gamma : \tau_1 \to \tau_2 \sim \tau_1' \to \tau_2'}{\Gamma \vdash \mathbf{left}\, \gamma : \tau_1 \sim \tau_1'} \quad \textsc{C\_Left1}$$

$$\frac{\Gamma \vdash \gamma : \tau_1\, \tau_2 \sim \tau_1'\, \tau_2'}{\Gamma \vdash \mathbf{left}\, \gamma : \tau_1 \sim \tau_1'} \quad \textsc{C\_Left2}$$

$$\frac{\Gamma \vdash \gamma : \tau_1 \to \tau_2 \sim \tau_1' \to \tau_2'}{\Gamma \vdash \mathbf{right}\, \gamma : \tau_2 \sim \tau_2'} \quad \textsc{C\_Right1}$$

$$\frac{\Gamma \vdash \gamma : \{\tau_1 \sim \tau_2\} \to \tau_3 \sim \{\tau_1' \sim \tau_2'\} \to \tau_3'}{\Gamma \vdash \mathbf{right}\, \gamma : \tau_3 \sim \tau_3'} \quad \textsc{C\_Right2}$$

$$\frac{\Gamma \vdash \gamma : \tau_1\, \tau_2 \sim \tau_1'\, \tau_2'}{\Gamma \vdash \mathbf{right}\, \gamma : \tau_2 \sim \tau_2'} \quad \textsc{C\_Right3}$$

$\boxed{\Gamma \vdash \tau : \kappa}$ Kinding rules

$$\frac{\alpha : \kappa \ \in \Gamma}{\Gamma \vdash \alpha : \kappa} \quad \textsc{K\_Var}$$

$$\frac{T : \kappa \ \in \Gamma}{\Gamma \vdash T : \kappa} \quad \textsc{K\_TypeConstr}$$

$$\frac{\begin{array}{l}\alpha \notin \Gamma \\ \Gamma, \alpha : \kappa_1 \vdash \tau : \kappa_2\end{array}}{\Gamma \vdash (\lambda(\alpha : \kappa_1), \tau) : \kappa_1 \to \kappa_2} \quad \text{K\_Abs}$$

$$\frac{\begin{array}{l}\Gamma \vdash \tau_1 : \kappa_2 \to \kappa_1 \\ \Gamma \vdash \tau_2 : \kappa_2\end{array}}{\Gamma \vdash \tau_1\, \tau_2 : \kappa_1} \quad \text{K\_App}$$

$$\frac{\begin{array}{l}\Gamma \vdash \tau_1 : \kappa \\ \Gamma \vdash \tau_2 : \kappa \\ \Gamma \vdash \tau_3 : *\end{array}}{\Gamma \vdash (\{\tau_1 \sim \tau_2\} \to \tau_3) : *} \quad \text{K\_CArrow}$$

$$\frac{\begin{array}{l}\alpha \notin \Gamma \\ \Gamma, \alpha : \kappa \vdash \tau : *\end{array}}{\Gamma \vdash (\forall\, (\alpha : \kappa), \tau) : *} \quad \text{K\_Forall}$$

$\boxed{\tau_1 \equiv \tau_2}$ Type equivalence

$$\frac{}{\tau \equiv \tau} \quad \text{EQ\_Refl}$$

$$\frac{\tau_2 \equiv \tau_1}{\tau_1 \equiv \tau_2} \quad \text{EQ\_Sym}$$

$$\frac{\begin{array}{l}\tau_1 \equiv \tau_2 \\ \tau_2 \equiv \tau_3\end{array}}{\tau_1 \equiv \tau_3} \quad \text{EQ\_Trans}$$

$$\frac{}{\alpha \equiv \alpha} \quad \text{EQ\_Var}$$

$$\frac{}{T \equiv T} \quad \text{EQ\_TypeConstr}$$

$$\frac{\begin{array}{l}\tau_1 \equiv \tau_1' \\ \tau_2 \equiv \tau_2' \\ \tau_3 \equiv \tau_3'\end{array}}{(\{\tau_1 \sim \tau_2\} \to \tau_3) \equiv (\{\tau_1' \sim \tau_2'\} \to \tau_3')} \quad \text{EQ\_CArrow}$$

$$\frac{\tau_1 \equiv \tau_2}{\forall\, (\alpha : \kappa), \tau_1 \equiv \forall\, (\alpha : \kappa), \tau_2} \quad \text{EQ\_Forall}$$

$$\frac{\tau_1 \equiv \tau_2}{\lambda(\alpha : \kappa), \tau_1 \equiv \lambda(\alpha : \kappa), \tau_2} \quad \text{EQ\_Abs}$$

$$\frac{\begin{array}{l}\tau_1 \equiv \tau_1' \\ \tau_2 \equiv \tau_2'\end{array}}{\tau_1\, \tau_2 \equiv \tau_1'\, \tau_2'} \quad \text{EQ\_App}$$

$$\frac{[\alpha \mapsto \tau_2]\ \tau_1 \rhd \tau_1'}{(\lambda(\alpha : \kappa), \tau_1)\, \tau_2 \equiv \tau_1'} \quad \text{EQ\_AppAbs}$$

$\boxed{t \longrightarrow tv}$ Operational semantics

$$\frac{\begin{array}{l}t_2 \longrightarrow tv_2 \\ t_1\ tv_2 \longrightarrow tv_3\end{array}}{t_1\ t_2 \longrightarrow tv_3} \quad \text{E\_App1}$$

$$\frac{\begin{array}{l} t \longrightarrow tv_1 \\ tv_1\ tv_2 \longrightarrow tv_3 \end{array}}{t\ tv_2 \longrightarrow tv_3} \quad \text{E\_APP2}$$

$$\frac{\begin{array}{l} [x \mapsto tv_1]\ t \rhd t' \\ t' \longrightarrow tv_2 \end{array}}{(\lambda(x:\tau) \Rightarrow t)\ tv_1 \longrightarrow tv_2} \quad \text{E\_APPABS}$$

$$\frac{t \longrightarrow tv}{(\lambda\{\alpha:\kappa\} \Rightarrow t) \longrightarrow (\lambda\{\alpha:\kappa\} \Rightarrow tv)} \quad \text{E\_TABS}$$

$$\frac{t \longrightarrow tv}{(\lambda\{c:\tau_1 \sim \tau_2\} \Rightarrow t) \longrightarrow (\lambda\{c:\tau_1 \sim \tau_2\} \Rightarrow tv)} \quad \text{E\_CABS}$$

$$\frac{t \longrightarrow tv}{t\ [\tau] \longrightarrow tv\ [\tau]} \quad \text{E\_TAPP}$$

$$\frac{\begin{array}{l} [\alpha \mapsto \tau]\ t \rhd t' \\ t' \longrightarrow tv \end{array}}{(\lambda\{\alpha:\kappa\} \Rightarrow t)\ [\tau] \longrightarrow tv} \quad \text{E\_TAPPABS}$$

$$\frac{t \longrightarrow tv}{(t\ \sim[\gamma]) \longrightarrow (tv\ \sim[\gamma])} \quad \text{E\_CAPP}$$

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<<no parses (char 6): [c*** |-> C] @ t |> t' >>
```

$$\frac{t' \longrightarrow tv}{(\lambda\{c:\tau_1 \sim \tau_2\} \Rightarrow t)\ \sim[\gamma] \longrightarrow tv} \quad \text{E\_CAPPABS}$$

$$\frac{t \longrightarrow tv}{(t:\tau) \longrightarrow (tv:\tau)} \quad \text{E\_ANNOT}$$

$$\frac{t \longrightarrow tv}{(t \blacktriangleright \gamma) \longrightarrow (tv \blacktriangleright \gamma)} \quad \text{E\_COERCE}$$

$\boxed{tv \longrightarrow v}$ type erasure

$$\frac{}{(\lambda(x:\tau) \Rightarrow t) \longrightarrow (\lambda x \Rightarrow t)} \quad \text{ERASE\_ABS}$$

$$\frac{tv \longrightarrow v}{(\lambda\{\alpha:\kappa\} \Rightarrow tv) \longrightarrow v} \quad \text{ERASE\_TABS}$$

$$\frac{tv \longrightarrow v}{(\lambda\{c:\tau_1 \sim \tau_2\} \Rightarrow tv) \longrightarrow v} \quad \text{ERASE\_CABS}$$

$$\frac{tv \longrightarrow v}{(tv\ [\tau]) \longrightarrow v} \quad \text{ERASE\_TAPP}$$

$$\frac{tv \longrightarrow v}{(tv\ \sim[\gamma]) \longrightarrow v} \quad \text{ERASE\_CAPP}$$

$$\frac{tv \longrightarrow v}{(tv:\tau) \longrightarrow v} \quad \text{ERASE\_ANNOT}$$

$$\frac{tv \longrightarrow v}{(tv \blacktriangleright \gamma) \longrightarrow v} \quad \text{ERASE\_COERCE}$$

$\boxed{[\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_3}$ Type substitution

$$\frac{}{[\alpha \mapsto \tau]\ \alpha \rhd \tau} \quad \textsc{SubstT\_Var1}$$

$$\frac{\alpha_1 \neq \alpha_2}{[\alpha_1 \mapsto \tau]\ \alpha_2 \rhd \alpha_2} \quad \textsc{SubstT\_Var2}$$

$$\frac{}{[\alpha \mapsto \tau]\ T \rhd T} \quad \textsc{SubstT\_Type}$$

$$\frac{\begin{array}{l}[\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2' \\ [\alpha \mapsto \tau_1]\ \tau_3 \rhd \tau_3' \\ [\alpha \mapsto \tau_1]\ \tau_4 \rhd \tau_4'\end{array}}{[\alpha \mapsto \tau_1]\ \{\tau_2 \sim \tau_3\} \to \tau_4 \rhd \{\tau_2' \sim \tau_3'\} \to \tau_4'} \quad \textsc{SubstT\_CArrow}$$

$$\frac{\begin{array}{l}\alpha_1 \neq \alpha_2 \\ [\alpha_1 \mapsto \tau_1]\ \tau_2 \rhd \tau_2'\end{array}}{[\alpha_1 \mapsto \tau_1]\ (\lambda(\alpha_2 : \kappa), \tau_2) \rhd (\lambda(\alpha_2 : \kappa), \tau_2')} \quad \textsc{SubstT\_Abs}$$

$$\frac{\begin{array}{l}\alpha_1 \neq \alpha_2 \\ [\alpha_1 \mapsto \tau_1]\ \tau_2 \rhd \tau_2'\end{array}}{[\alpha_1 \mapsto \tau_1]\ (\forall\,(\alpha_2 : \kappa), \tau_2) \rhd (\forall\,(\alpha_2 : \kappa), \tau_2')} \quad \textsc{SubstT\_Forall}$$

$$\frac{\begin{array}{l}[\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2' \\ [\alpha \mapsto \tau_1]\ \tau_3 \rhd \tau_3'\end{array}}{[\alpha \mapsto \tau_1]\ \tau_2\,\tau_3 \rhd \tau_2'\,\tau_3'} \quad \textsc{SubstT\_App}$$

$\boxed{[x \mapsto tv]\ t_1 \rhd t_2}$ substitution

$$\frac{}{[x \mapsto tv]\ x \rhd tv} \quad \textsc{Subst\_Var1}$$

$$\frac{x_1 \neq x_2}{[x_1 \mapsto tv]\ x_2 \rhd x_2} \quad \textsc{Subst\_Var2}$$

$$\frac{}{[x \mapsto tv]\ (\lambda(x : \tau) \Rightarrow t) \rhd (\lambda(x : \tau) \Rightarrow t)} \quad \textsc{Subst\_Abs1}$$

$$\frac{\begin{array}{l}x_1 \neq x_2 \\ [x_1 \mapsto tv]\ t_1 \rhd t_2\end{array}}{[x_1 \mapsto tv]\ (\lambda(x_2 : \tau) \Rightarrow t_1) \rhd (\lambda(x_2 : \tau) \Rightarrow t_2)} \quad \textsc{Subst\_Abs2}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (\lambda\{\alpha : \kappa\} \Rightarrow t_1) \rhd (\lambda\{\alpha : \kappa\} \Rightarrow t_2)} \quad \textsc{Subst\_TAbs}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (\lambda\{c : \tau_1 \sim \tau_2\} \Rightarrow t_1) \rhd (\lambda\{c : \tau_1 \sim \tau_2\} \Rightarrow t_2)} \quad \textsc{Subst\_CAbs}$$

$$\frac{\begin{array}{l}[x \mapsto tv]\ t_1 \rhd t_1' \\ [x \mapsto tv]\ t_2 \rhd t_2'\end{array}}{[x \mapsto tv]\ t_1\,t_2 \rhd t_1'\,t_2'} \quad \textsc{Subst\_App}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (t_1\ [\tau]) \rhd (t_2\ [\tau])} \quad \textsc{Subst\_TApp}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (t_1\ {\sim}[\gamma]) \rhd (t_2\ {\sim}[\gamma])} \quad \textsc{Subst\_CApp}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (t_1 : \tau) \rhd (t_2 : \tau)} \quad \textsc{Subst\_Annot}$$

$$\frac{[x \mapsto tv]\ t_1 \rhd t_2}{[x \mapsto tv]\ (t_1 \blacktriangleright \gamma) \rhd (t_2 \blacktriangleright \gamma)} \quad \textsc{Subst\_Coerce}$$

$\boxed{[\alpha \mapsto \tau]\ t_1 \rhd t_2}$ substitution of type variable in term

$$\frac{}{[\alpha \mapsto \tau]\ x \rhd x} \quad \textsc{TtSubst\_Var}$$

$$\frac{\begin{array}{c}[\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2' \\ [\alpha \mapsto \tau_1]\ t_1 \rhd t_2\end{array}}{[\alpha \mapsto \tau_1]\ (\lambda(x : \tau_2) \Rightarrow t_1) \rhd (\lambda(x : \tau_2') \Rightarrow t_2)} \quad \textsc{TtSubst\_Abs}$$

$$\frac{\begin{array}{l}\alpha_1 \neq \alpha_2 \\ [\alpha_1 \mapsto \tau]\ t_1 \rhd t_2\end{array}}{[\alpha_1 \mapsto \tau]\ (\lambda\{\alpha_2 : \kappa\} \Rightarrow t_1) \rhd (\lambda\{\alpha_2 : \kappa\} \Rightarrow t_2)} \quad \textsc{TtSubst\_TAbs}$$

$$\frac{\begin{array}{c}[\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2' \\ [\alpha \mapsto \tau_1]\ \tau_3 \rhd \tau_3' \\ [\alpha \mapsto \tau_1]\ t_1 \rhd t_2\end{array}}{[\alpha \mapsto \tau_1]\ (\lambda\{c : \tau_2 \sim \tau_3\} \Rightarrow t_1) \rhd (\lambda\{c : \tau_2' \sim \tau_3'\} \Rightarrow t_2)} \quad \textsc{TtSubst\_CAbs}$$

$$\frac{\begin{array}{c}[\alpha \mapsto \tau]\ t_1 \rhd t_1' \\ [\alpha \mapsto \tau]\ t_2 \rhd t_2'\end{array}}{[\alpha \mapsto \tau]\ t_1\ t_2 \rhd t_1'\ t_2'} \quad \textsc{TtSubst\_App}$$

$$\frac{\begin{array}{c}[\alpha \mapsto \tau_1]\ t_1 \rhd t_2 \\ [\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2'\end{array}}{[\alpha \mapsto \tau_1]\ (t_1\ [\tau_2]) \rhd (t_2\ [\tau_2'])} \quad \textsc{TtSubst\_TApp}$$

$$\frac{\begin{array}{l}[\alpha \mapsto \tau]\ t_1 \rhd t_2 \\ \texttt{<<no parses (char 17): [a |-> T] @ C***1 |> C2 >>}\end{array}}{[\alpha \mapsto \tau]\ (t_1 \sim\![\gamma_1]) \rhd (t_2 \sim\![\gamma_2])} \quad \textsc{TtSubst\_CApp}$$

$$\frac{\begin{array}{c}[\alpha \mapsto \tau_1]\ t_1 \rhd t_2 \\ [\alpha \mapsto \tau_1]\ \tau_2 \rhd \tau_2'\end{array}}{[\alpha \mapsto \tau_1]\ (t_1 : \tau_2) \rhd (t_2 : \tau_2')} \quad \textsc{TtSubst\_Annot}$$

$$\frac{\begin{array}{l}[\alpha \mapsto \tau]\ t_1 \rhd t_2 \\ \texttt{<<no parses (char 17): [a |-> T] @ C***1 |> C2 >>}\end{array}}{[\alpha \mapsto \tau]\ (t_1 \blacktriangleright \gamma_1) \rhd (t_2 \blacktriangleright \gamma_2)} \quad \textsc{TtSubst\_Coerce}$$

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Definition rules:        80 good    3 bad
Definition rule clauses: 207 good    3 bad
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