

$((B \rho) I) \longrightarrow B$	[p-bool]
$((N \rho) I) \longrightarrow N$	[p-num]
$((CH \rho) I) \longrightarrow CH$	[p-str]
$((O \rho) I) \longrightarrow O$	[p-op]
$((\lambda (X T) M) \rho) I \longrightarrow ((\lambda (X T) M) \rho)$	[p-abs]
$((M_1 M_2) \rho) I \longrightarrow (((M_1 \rho) (M_2 \rho)) I)$	[p-app]
$((M :: T) \rho) I \longrightarrow ((M \rho) :: T) I$	[p-asc]
$((\text{mlet } (X T) = M_1 \text{ in } M_2) \rho) I \longrightarrow ((\text{mlet } (X T) = (M_1 \rho) \text{ in } (M_2 \rho)) I)$	[p-let]
$((X \rho) I) \longrightarrow W$ where $\text{lookup2 } \llbracket \rho, X, I, W \rrbracket, \text{construirEnvCond } \llbracket \rho \rrbracket$	[p-x]
$((\lambda (X T) M) \rho) W) I \longrightarrow ((\text{subst } \llbracket (X W), M \rrbracket \rho) I)$	[app]
$((OB W \dots) I) \longrightarrow W_i$ where $\delta B \llbracket (OB W \dots), W_i \rrbracket$	[δB]
$((ON W \dots) I) \longrightarrow W_i$ where $\delta N \llbracket (ON W \dots), W_i \rrbracket$	[δN]
$((W :: T) I) \longrightarrow W$	[asc]
$((\text{mlet } (X T) = W \text{ in } (M \rho)) I) \longrightarrow ((M \text{ ext } \llbracket \rho, (X (T W)) \rrbracket) I)$	[let]
$((\text{mlet } (X T) = C_1 \text{ in } C_2) I)$	[let <sub>1</sub> ]
$\longrightarrow ((\text{mlet } (X T) = \text{configuration } \llbracket (\text{apply-reduction-relation } \text{vp } (C_1 T)) \rrbracket \text{ in } C_2) I)$ where $(\text{not } (\text{is-value? } C_1))$ , $\text{novacio? } \llbracket (\text{apply-reduction-relation } \text{vp } (C_1 T)) \rrbracket$	
$((C :: T) I)$	[asc <sub>1</sub> ]
$\longrightarrow ((\text{configuration } \llbracket (\text{apply-reduction-relation } \text{vp } (C T)) \rrbracket :: T) T)$ where $(\text{not } (\text{is-value? } C))$ , $\text{novacio? } \llbracket (\text{apply-reduction-relation } \text{vp } (C T)) \rrbracket$	
$((C_1 C_2) I)$	[app <sub>1</sub> ]
$\longrightarrow ((\text{configuration } \llbracket (\text{apply-reduction-relation } \text{vp } (C_1 (\rightarrow^* I))) \rrbracket C_2) I)$ where $(\text{not } (\text{is-value? } C_1))$ , $\text{novacio? } \llbracket (\text{apply-reduction-relation } \text{vp } (C_1 (\rightarrow^* I))) \rrbracket$	
$((\lambda (X T) M) \rho) C_2) I)$	[app <sub>2</sub> ]
$\longrightarrow (((\lambda (X T) M) \rho) \text{configuration } \llbracket (\text{apply-reduction-relation } \text{vp } (C_2 T)) \rrbracket) I)$ where $(\text{not } (\text{is-value? } C_2))$ , $\text{novacio? } \llbracket (\text{apply-reduction-relation } \text{vp } (C_2 T)) \rrbracket$	
$((O C_2) I)$	[app <sub>20</sub> ]
$\longrightarrow ((O \text{configuration } \llbracket (\text{apply-reduction-relation } \text{vp } (C_2 \text{typi } \llbracket O \rrbracket)) \rrbracket) I)$ where $(\text{not } (\text{is-value? } C_2))$ , $\text{novacio? } \llbracket (\text{apply-reduction-relation } \text{vp } (C_2 \text{typi } \llbracket O \rrbracket)) \rrbracket$	