$[\text{ass}_{\text{ns}}]$ $env_V,\ env_P \vdash \langle x := a,\ sto\rangle \to sto[l \mapsto v]$
where $l = env_V\ x$ and $v = \mathcal{A}[\![a]\!](sto \circ env_V)$

$[\text{skip}_{\text{ns}}]$ $env_V,\ env_P \vdash \langle \texttt{skip},\ sto\rangle \to sto$

$$[\text{comp}_{\text{ns}}] \quad \frac{env_V,\ env_P \vdash \langle S_1,\ sto\rangle \to sto',\ \ env_V,\ env_P \vdash \langle S_2,\ sto'\rangle \to sto''}{env_V,\ env_P \vdash \langle S_1;S_2,\ sto\rangle \to sto''}$$

$$[\text{if}^{\text{tt}}_{\text{ns}}] \quad \frac{env_V,\ env_P \vdash \langle S_1,\ sto\rangle \to sto'}{env_V,\ env_P \vdash \langle \texttt{if}\ b\ \texttt{then}\ S_1\ \texttt{else}\ S_2,\ sto\rangle \to sto'} \quad \text{if } \mathcal{B}[\![b]\!](sto \circ env_V) = \mathbf{tt}$$

$$[\text{if}^{\text{ff}}_{\text{ns}}] \quad \frac{env_V,\ env_P \vdash \langle S_2,\ sto\rangle \to sto'}{env_V,\ env_P \vdash \langle \texttt{if}\ b\ \texttt{then}\ S_1\ \texttt{else}\ S_2,\ sto\rangle \to sto'} \quad \text{if } \mathcal{B}[\![b]\!](sto \circ env_V) = \mathbf{ff}$$

$$[\text{while}^{\text{tt}}_{\text{ns}}] \quad \frac{\begin{array}{c} env_V,\ env_P \vdash \langle S,\ sto\rangle \to sto', \\ env_V,\ env_P \vdash \langle \texttt{while}\ b\ \texttt{do}\ S,\ sto'\rangle \to sto'' \end{array}}{env_V,\ env_P \vdash \langle \texttt{while}\ b\ \texttt{do}\ S,\ sto\rangle \to sto''} \quad \text{if } \mathcal{B}[\![b]\!](sto \circ env_V) = \mathbf{tt}$$

$[\text{while}^{\text{ff}}_{\text{ns}}]$ $env_V,\ env_P \vdash \langle \texttt{while}\ b\ \texttt{do}\ S,\ sto\rangle \to sto$
if $\mathcal{B}[\![b]\!](sto \circ env_V) = \mathbf{ff}$

$$[\text{block}_{\text{ns}}] \quad \frac{\begin{array}{c} \langle D_V,\ env_V,\ sto\rangle \to_D (env'_V,\ sto'), \\ env'_V,\ env'_P \vdash \langle S,\ sto'\rangle \to sto'' \end{array}}{env_V,\ env_P \vdash \langle \texttt{begin}\ D_V\ D_P\ S\ \texttt{end},\ sto\rangle \to sto''}$$
where $env'_P = \text{upd}_{\text{P}}(D_P,\ env'_V,\ env_P)$

$$[\text{call}_{\text{ns}}] \quad \frac{env'_V,\ env'_P \vdash \langle S,\ sto\rangle \to sto'}{env_V,\ env_P \vdash \langle \texttt{call}\ p,\ sto\rangle \to sto'}$$
where $env_P\ p = (S,\ env'_V,\ env'_P)$

$$[\text{call}^{\text{rec}}_{\text{ns}}] \quad \frac{env'_V,\ env'_P[p \mapsto (S,\ env'_V,\ env'_P)] \vdash \langle S,\ sto\rangle \to sto'}{env_V,\ env_P \vdash \langle \texttt{call}\ p,\ sto\rangle \to sto'}$$
where $env_P\ p = (S,\ env'_V,\ env'_P)$

Table 3.6: Natural semantics for **Proc** with static scope rules