Règles du While en Sémantique Naturelle

$$(x := a, \sigma) \rightarrow \sigma[x \mapsto \mathcal{A}[a]\sigma]$$

$$(\texttt{skip}, \sigma) \rightarrow \sigma$$

$$\frac{(S_1, \sigma) \rightarrow \sigma' \quad (S_2, \sigma') \rightarrow \sigma"}{\big((S_1; S_2), \sigma\big) \rightarrow \sigma"}$$

$$\mathcal{B}[b]\sigma = tt : \frac{(S_1, \sigma) \rightarrow \sigma'}{(\texttt{ib } b \texttt{ then } S_1 \texttt{ else } S_2) \rightarrow \sigma'}$$

$$\mathcal{B}[b]\sigma = ff : \frac{(S_2, \sigma) \rightarrow \sigma'}{(\texttt{ib } b \texttt{ then } S_1 \texttt{ else } S_2) \rightarrow \sigma'}$$

$$\mathcal{B}[b]\sigma = tt : \frac{(S, \sigma) \rightarrow \sigma' \quad (\texttt{while } b \texttt{ do } S, \sigma') \rightarrow \sigma"}{(\texttt{while } b \texttt{ do } S, \sigma) \rightarrow \sigma"}$$

$$\mathcal{B}[b]\sigma = ff : (\texttt{while } b \texttt{ do } S, \sigma) \rightarrow \sigma$$