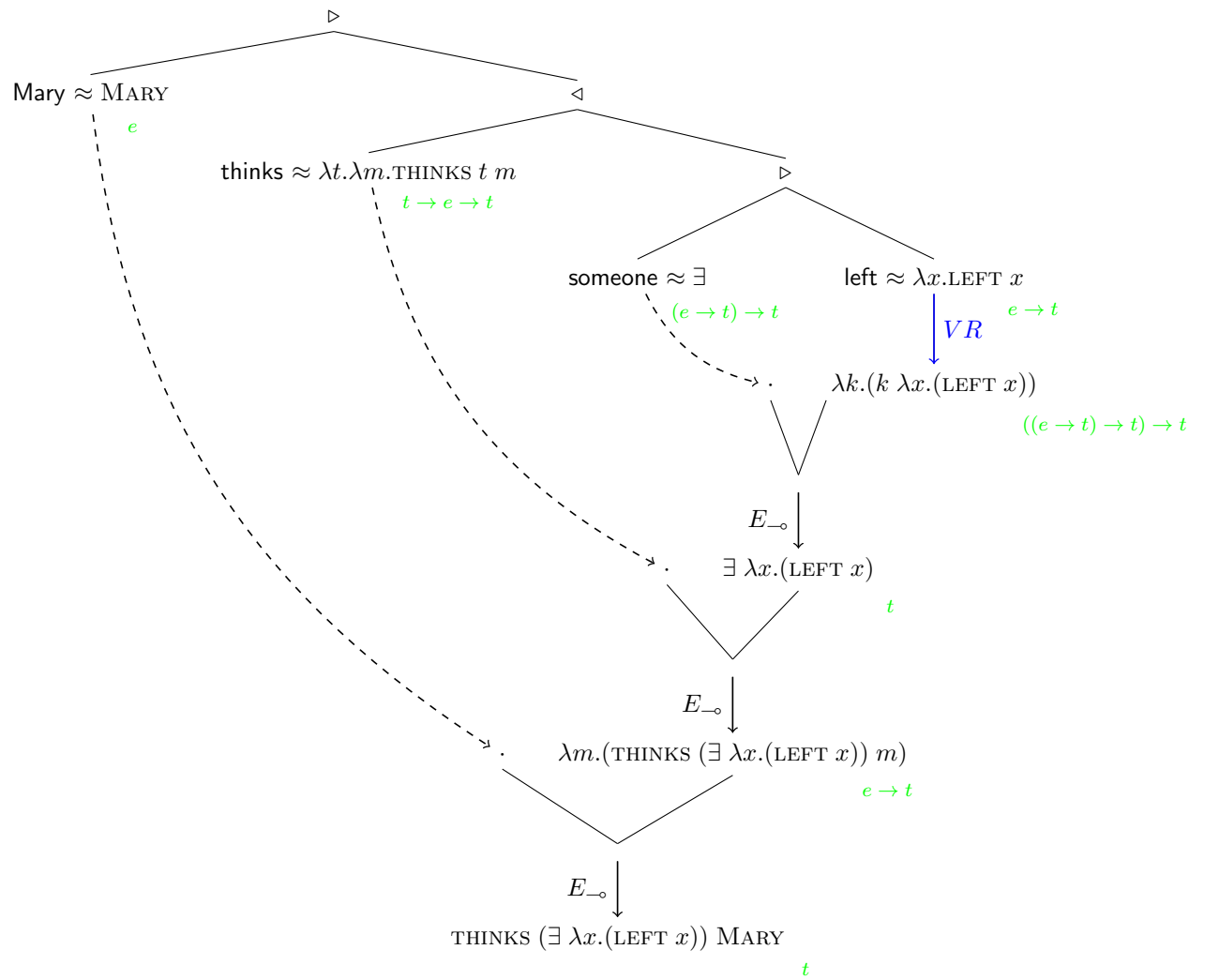


Logic and Language: Exercise (Week 2)

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1 Hendriks

1.1 Local Interpretation



1.2 Non-Local Interpretation



2 Barker

2.1 Left-to-right incremental

$$\begin{aligned}
& (\text{Mary} \triangleright (\text{thinks} \triangleleft (\text{someone} \triangleright \text{left}))) \rightsquigarrow (\lambda x.x) \\
\equiv & \lambda k. (\text{Mary} \rightsquigarrow \lambda n. ((\text{thinks} \triangleleft (\text{someone} \triangleright \text{left})) \rightsquigarrow \lambda m. (k \ (m \ n)))) (\lambda x.x) \\
\rightarrow_{\beta} & \text{Mary} \rightsquigarrow \lambda n. ((\text{thinks} \triangleleft (\text{someone} \triangleright \text{left})) \rightsquigarrow \lambda m. (m \ n)) \\
\equiv & \lambda k. (k \ \text{MARY}) \ \lambda n. ((\text{thinks} \triangleleft (\text{someone} \triangleright \text{left})) \rightsquigarrow \lambda m. (k \ (m \ n))) \\
\rightarrow_{\beta} & (\text{thinks} \triangleleft (\text{someone} \triangleright \text{left})) \rightsquigarrow \lambda m. (m \ \text{MARY}) \\
\equiv & \lambda k. (((\text{thinks} \rightsquigarrow \lambda m. ((\text{someone} \triangleright \text{left}) \rightsquigarrow \lambda n. (k \ (m \ n)))) \ \lambda m. (m \ \text{MARY})) \\
\rightarrow_{\beta} & \text{thinks} \rightsquigarrow \lambda m. ((\text{someone} \triangleright \text{left}) \rightsquigarrow \lambda n. ((m \ n) \ \text{MARY})) \\
\equiv & \lambda k. (k \ \text{THINKS}) \ \lambda m. ((\text{someone} \triangleright \text{left}) \rightsquigarrow \lambda n. ((m \ n) \ \text{MARY})) \\
\rightarrow_{\beta} & (\text{someone} \triangleright \text{left}) \rightsquigarrow \lambda n. ((\text{THINKS} \ n) \ \text{MARY}) \\
\equiv & \lambda k. (\text{someone} \rightsquigarrow \lambda n. (\text{left} \rightsquigarrow \lambda m. (k \ (m \ n)))) \ \lambda n. ((\text{THINKS} \ n) \ \text{MARY}) \\
\rightarrow_{\beta} & \text{someone} \rightsquigarrow \lambda n. (\text{left} \rightsquigarrow \lambda m. (\text{THINKS} \ (m \ n) \ \text{MARY})) \\
\equiv & \exists \lambda n. (\lambda k. (k \ \text{LEFT}) \ \lambda m. (\text{THINKS} \ (m \ n) \ \text{MARY})) \\
\rightarrow_{\beta} & \exists \lambda n. (\text{THINKS} \ (\text{LEFT} \ n) \ \text{MARY})
\end{aligned}$$

2.2 Right-to-left incremental

3 Plotkin