Problems with Translation

- Another example:

$$\begin{aligned}[\![(\lambda\, x.\ x)\ (1, \mathsf{T})]\!] \;&=\; (\lambda\!\!\lambda x \in |num| \times |bool|.\ x) \\ &\quad \diamond (((|,|\ |num|\ |bool|) \diamond |1|) \\ &\quad\quad \diamond |\mathsf{T}|)\end{aligned}$$

- Would prefer:

$$[\![(\lambda\, x.\ x)\ (1, \mathsf{T})]\!] \;=\; \hat{\mathsf{I}}\ \langle |1|, \mathsf{true}\rangle$$

- Achievable by logical simplification if:

$$|\mathsf{T}| \;=\; \mathsf{true}$$

$$x \in X \wedge y \in Y \Rightarrow (((|,|\ X\ \ Y) \diamond x) \diamond y) \;=\; \langle x, y\rangle$$

$$y \in X \Rightarrow (\lambda\!\!\lambda x \in X.\ x) \diamond y \;=\; \hat{\mathsf{I}}\ y$$

- Must override HOL definitions of T, pairing (,) etc. to achieve this
  - needs more thought