

$\mathcal{D} = \text{Desugar}$ .

A fixed desugaring of Scheme **cond** to  $V$ 's **if-then-else**:

$$\begin{aligned}\mathcal{D}[(\text{cond})] &= \text{wrong} \\ \mathcal{D}[(\text{cond } [e_g \ e_a] \ \dots)] &= \text{if } \mathcal{D}[e_g] \text{ then } \mathcal{D}[e_a] \text{ else } \mathcal{D}[(\text{cond } \dots)]\end{aligned}$$

where  $e_g$  and  $e_a$  are *exprs*.

This translation desugars **cond** into the Verse **if-then-else** form, which itself is syntactic sugar for **one**.

Here is a translation from **cond** to **one**.

$$\mathcal{D}[(\text{cond})] = \text{wrong}$$

$$\mathcal{D}[(\text{cond } [e_{g1} \ e_{a1}] \ [e_{g2} \ e_{a2}] \ \dots \ [e_{gn} \ e_{an}] \ )] =$$

$$(\text{one } \{(\mathcal{D}[e_{g1}]; \ \lambda\langle \rangle. \ \mathcal{D}[e_{a1}]) \ \mathbf{||} \ (\mathcal{D}[e_{g2}]; \ \lambda\langle \rangle. \ \mathcal{D}[e_{a2}]) \ \mathbf{||} \ \dots \ \mathbf{||} \ (\mathcal{D}[e_{gn}]; \ \lambda\langle \rangle. \ \mathcal{D}[e_{an}]) \ \mathbf{||} \ \lambda\langle \rangle. \ \text{wrong}\})\langle \rangle)$$

Inductively:

$$\mathcal{D}[(\text{cond } [e_g \ e_a] \ \dots)] =$$

$$(\text{one } \{(\mathcal{D}[e_g]; \ \lambda\langle \rangle. \ \mathcal{D}[e_a]) \ \mathbf{||} \ \mathcal{D}[(\text{cond } \dots)]\})\langle \rangle$$