

- *Initial* $\langle(\psi, \chi)\rangle$ , if  $\psi$  consists of a single frame  $\phi$  with  $\text{dom}(\phi) = \{\text{this}\}$ , and there exists some address  $\alpha$ , such that  $[\text{this}]_\phi = \alpha$ , and  $\text{dom}(\chi) = \alpha$ , and  $\chi(\alpha) = (\text{Object}, \emptyset)$ .
- *Arising* $(M \circ M')$  =  $\{ \sigma \mid \exists \sigma_0. [ \text{Initial}(\sigma_0) \wedge M \circ M', \sigma_0 \rightsquigarrow^* \sigma ] \}$