

$$\text{Tr}_{\textcolor{green}{A}, \textcolor{red}{B}}^C(f) : \textcolor{green}{A}^{\text{op}} \times \textcolor{red}{B} \xrightarrow{\text{Pos}} \mathbf{Bool}$$

$$\langle \textcolor{green}{a}^*, \textcolor{red}{b} \rangle \mapsto \bigvee_{c \in C} f(\langle \textcolor{green}{a}^*, \textcolor{red}{c} \rangle, \langle \textcolor{green}{b}^*, \textcolor{red}{c} \rangle).$$