$$\operatorname{Tr}_{A,B}^{C}(f) : A^{\operatorname{op}} \times {}^{B} \to_{\operatorname{Pos}} \operatorname{Bool}$$

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