

$$\begin{aligned}
 (\mathbf{f} \circ \mathbf{g}) : \mathbf{A}^{\text{op}} \times \mathbf{C} &\rightarrow_{\text{Pos}} \mathbf{Bool}, \\
 \langle a^*, c \rangle &\mapsto \bigvee_{b_1 \leq b_2, b_1, b_2 \in \mathbf{B}} \mathbf{f}(a^*, b_1) \wedge \mathbf{g}(b_2^*, c).
 \end{aligned}$$