

$$\begin{aligned}
(\mathbf{f}_1 \circ \mathbf{g}_1)(a^*, c) &= \bigvee_{b \in \mathbf{B}} \mathbf{f}_1(a^*, b) \wedge \mathbf{g}_1(b^*, c) \\
&\leq_{\mathbf{DP}} \bigvee_{b \in \mathbf{B}} \mathbf{f}_2(a^*, b) \wedge \mathbf{g}_2(b^*, c) \\
&= (\mathbf{f}_2 \circ \mathbf{g}_2)(a^*, c).
\end{aligned}$$