$$\mathrm{Tr}_{\mathbf{A},\mathbf{B}}^{\mathbf{C}}(\mathbf{f}_1)(a^*, b) = \bigvee_{c \in \mathbf{C}} \mathbf{f}_1(\langle c, a \rangle^*, \langle c, b \rangle)$$

$$\preceq_{\mathbf{DP}} \bigvee_{c \in \mathbf{C}} \mathbf{f}_2(\langle c, a \rangle^*, \langle c, b \rangle)$$

$$= \mathrm{Tr}_{\mathbf{A},\mathbf{B}}^{\mathbf{C}}(\mathbf{f}_2)(a^*, b).$$