

Lemma. Consider $\mathbf{f}, \mathbf{g} \in \mathbf{Hom}_{\mathbf{DP}}(\mathbf{A}; \mathbf{B})$ and $\mathbf{h} \in \mathbf{Hom}_{\mathbf{DP}}(\mathbf{B}; \mathbf{C})$. One has

$$(\mathbf{f} \vee \mathbf{g}) \circ \mathbf{h} = (\mathbf{f} \circ \mathbf{h}) \vee (\mathbf{g} \circ \mathbf{h}).$$