$$\operatorname{Hom}_{\mathbf{C}}(X;Y) \otimes \operatorname{Hom}_{\mathbf{C}}(Y;Z) \longrightarrow \operatorname{Hom}_{\mathbf{C}}(X;Z)$$

$$F_{X,Y} \otimes F_{Y,Z} \downarrow \qquad \qquad \downarrow F_{X,Z}$$

$$\operatorname{Hom}_{\mathbf{D}}(F(Y);F(Z)) \otimes \operatorname{Hom}_{\mathbf{D}}(F(X);F(Y)) \longrightarrow \operatorname{Hom}_{\mathbf{D}}(F(X);F(Z))$$