Definition (Kleisli composition). Let $\langle M, \mathrm{mu}, \mathrm{un}\rangle$ be a monad on a category $\mathbf{C}$, let $X, Y, Z \in \mathrm{Ob}_{\mathbf{C}}$, and let $f : X \to MY$ and $g : Y \to MZ$ be morphisms in $\mathbf{C}$ (so, they are Kleisli morphisms). Their *Kleisli composition* is the morphism in $\mathbf{C}$ given by the composition

$$X \xrightarrow{f} M(Y) \xrightarrow{Mg} (M \fatsemi M)(Z) \xrightarrow{\mathrm{mu}_Z} M(Z).$$