$$\begin{array}{ccc}
\mathbf{U}_f \times (\mathbf{X}_f * \mathbf{X}_g * \mathbf{X}_h) & \xrightarrow{\mathrm{dyn}_{(f\,\fatsemi\,(g\,\fatsemi\,h)}} & (\mathbf{X}_f * \mathbf{X}_g * \mathbf{X}_h) \\
\uparrow{\scriptstyle \mathrm{id}_{\mathbf{U}_f} \times (\mathrm{coh}_{(f\,\fatsemi\,g)\,\fatsemi\,h} \times \mathrm{id}_{(\mathbf{X}_h)})} & & \uparrow{\scriptstyle \mathrm{coh}_{(f\,\fatsemi\,g)\,\fatsemi\,h}} \\
\mathbf{U}_f \times ((\mathbf{X}_f * \mathbf{X}_g) \times (\mathbf{X}_h)) & & (\mathbf{X}_f * \mathbf{X}_g) \times (\mathbf{X}_h) \\
\uparrow{\scriptstyle \mathrm{id}_{\mathbf{U}_f} \times (\mathrm{coh}_{f\,\fatsemi\,g} \times \mathrm{id}_{(\mathbf{X}_h)})} & & \uparrow{\scriptstyle \mathrm{coh}_{f\,\fatsemi\,g} \times \mathrm{id}_{(\mathbf{X}_h)}} \\
\mathbf{U}_f \times (((\mathbf{X}_f) \times (\mathbf{X}_g)) \times (\mathbf{X}_h)) & \xrightarrow{\mathrm{dyn}''_{(f\,\fatsemi\,g)\,\fatsemi\,h}} & ((\mathbf{X}_f) \times (\mathbf{X}_g)) \times (\mathbf{X}_h)
\end{array}$$