$$(\mathbf{X}_f * \mathbf{X}_g) \xrightarrow{\mathrm{coh}_{f,g}^{-1}} (\mathbf{X}_f) \times (\mathbf{X}_g) \xrightarrow{\pi_2} (\mathbf{X}_g) \xrightarrow{\mathrm{ro}_g} \mathbf{Y}_g$$