

$$\begin{array}{ccccccc}
 & & \mathbb{P}_{\leq} & \begin{array}{c} \xrightarrow{f} \\ \perp \\ \xleftarrow{g} \end{array} & \mathbb{Q}_{\sqsubseteq} & & \\
 & & & & & & \\
 & & p & \xrightarrow{1_{f(p)}} & f(p) & \longrightarrow & f(g(q)) \\
 \eta_p \swarrow & & \downarrow & & \downarrow & & \nwarrow \varepsilon_q \\
 g(f(p)) & \longrightarrow & g(q) & \xrightarrow{1_{g(q)}} & q & & 
 \end{array}$$