$$
\begin{array}{ccc}
\mathbf{P}_1 & \xrightarrow{\quad f_1 \quad} & \mathbf{S}_1 \\
& \mathbf{Rel} & \\
f \downarrow \;\; \mathbf{Rel} & \mathbf{Rel} & \uparrow g \\
& \mathbf{Rel} & \\
\mathbf{P}_2 & \xrightarrow[\quad f_2 \quad]{} & \mathbf{S}_2
\end{array}
$$