

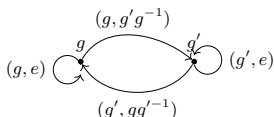
Let us look at a small category as

$$\begin{array}{c} \text{Mor} \\ s \downarrow \quad \downarrow t \\ \text{Ob} \end{array}$$

Consider a group G , there are two canonically associated categories. The first is

$$G \rightsquigarrow \left(s = \text{pr} \downarrow \downarrow t = \text{left mul} \right) := EG$$

Such that for each pair of objects $g, g' \in G$



we have $\text{Hom}_{EG}(g, g') \cong \{*\}$

The second is the usual category with only one object

$$BG := \left(\begin{array}{c} G \\ \downarrow \\ \{*\} \end{array} \right)$$

We have at the same time two pullbacks

$$\begin{array}{ccc} \left(\begin{array}{c} G \\ \downarrow \downarrow \\ G \end{array} \right) & \longrightarrow & EG \\ \downarrow & & \downarrow \\ \left(\begin{array}{c} \{*\} \\ \downarrow \\ \{*\} \end{array} \right) & \longrightarrow & BG \end{array}$$

$$\begin{array}{ccc} \left(\begin{array}{c} \{*\} \\ \downarrow \\ \{*\} \end{array} \right) & \longrightarrow & \left(\begin{array}{c} \{*\} \\ \downarrow \\ \{*\} \end{array} \right) \\ \downarrow & & \downarrow \\ \left(\begin{array}{c} \{*\} \\ \downarrow \\ \{*\} \end{array} \right) & \longrightarrow & BG \end{array}$$

Remedy: Derived Functors