

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{MonCat}]{f_1} & \mathbf{D}_1 \\
 \downarrow F & & \uparrow G \\
 \mathbf{C}_2 & \xrightarrow[\text{MonCat}]{f_2} & \mathbf{D}_2 \\
 \downarrow H & & \uparrow K \\
 \mathbf{C}_3 & \xrightarrow[\text{MonCat}]{f_3} & \mathbf{D}_3
 \end{array}$$

The diagram shows a vertical sequence of three categories $\mathbf{C}_1, \mathbf{C}_2, \mathbf{C}_3$ on the left and $\mathbf{D}_1, \mathbf{D}_2, \mathbf{D}_3$ on the right. Horizontal arrows labeled MonCat connect \mathbf{C}_i to \mathbf{D}_i for $i=1,2,3$. These arrows are also labeled with f_1, f_2, f_3 above them. Vertical arrows connect $\mathbf{C}_1 \rightarrow \mathbf{C}_2$ (labeled F on the left), $\mathbf{C}_2 \rightarrow \mathbf{C}_3$ (labeled H on the left), $\mathbf{D}_1 \rightarrow \mathbf{D}_2$ (labeled G on the right), and $\mathbf{D}_2 \rightarrow \mathbf{D}_3$ (labeled K on the right).

$$\begin{array}{ccc}
 \mathbf{C}_1 & \xrightarrow[\text{MonCat}]{f_1} & \mathbf{D}_1 \\
 \downarrow F \circ H & & \uparrow K \circ G \\
 \mathbf{C}_3 & \xrightarrow[\text{MonCat}]{f_3} & \mathbf{D}_3
 \end{array}$$

This diagram is a simplified version of the one on the left. It shows a direct relationship between \mathbf{C}_1 and \mathbf{C}_3 (labeled $F \circ H$ on the left) and between \mathbf{D}_1 and \mathbf{D}_3 (labeled $K \circ G$ on the right). The horizontal MonCat arrows and their labels f_1, f_3 remain.