

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

A commutative diagram with three rows and two columns of objects. The objects are  $\mathbf{C}_1, \mathbf{C}_2, \mathbf{C}_3$  on the left and  $\mathbf{D}_1, \mathbf{D}_2, \mathbf{D}_3$  on the right. Horizontal arrows point from  $\mathbf{C}_i$  to  $\mathbf{D}_i$  for  $i=1,2,3$ , labeled  $f_1, f_2, f_3$  above and **MonCat** below. Vertical arrows point from  $\mathbf{C}_1$  to  $\mathbf{C}_2$  (labeled  $F$  on the left), from  $\mathbf{C}_2$  to  $\mathbf{C}_3$  (labeled  $H$  on the left), from  $\mathbf{D}_1$  to  $\mathbf{D}_2$  (labeled  $G$  on the right), and from  $\mathbf{D}_2$  to  $\mathbf{D}_3$  (labeled  $K$  on the right). The text **MonCaMonCat** is placed between the vertical arrows on both sides.

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

A commutative diagram with two rows and two columns of objects. The objects are  $\mathbf{C}_1, \mathbf{C}_3$  on the left and  $\mathbf{D}_1, \mathbf{D}_3$  on the right. Horizontal arrows point from  $\mathbf{C}_i$  to  $\mathbf{D}_i$  for  $i=1,3$ , labeled  $f_1, f_3$  above and **MonCat** below. Vertical arrows point from  $\mathbf{C}_1$  to  $\mathbf{C}_3$  (labeled  $F \circ H$  on the left) and from  $\mathbf{D}_1$  to  $\mathbf{D}_3$  (labeled  $K \circ G$  on the right). The text **MonCaMonCat** is placed between the vertical arrows.