

$$\begin{array}{ccc}
X_n \otimes X_{a_1} \otimes \cdots \otimes X_{a_n} & \xrightarrow{1_{X_n} \otimes \sigma_1 \otimes \cdots \otimes \sigma_n} & X_n \otimes X_{a_1} \otimes \cdots \otimes X_{a_n} \\
\downarrow \mu_{a_1, \dots, a_n} & & \downarrow \mu_{a_1, \dots, a_n} \\
X_{a_1 + \cdots + a_n} & \xrightarrow{(\sigma_1, \sigma_2, \dots, \sigma_n)} & X_{a_1 + \cdots + a_n}
\end{array}$$