

$$\begin{array}{ccc}
 \mathbf{Vect}_{\mathbb{K}}^{\mathrm{op}} & & \mathbf{Vect}_{\mathbb{K}} \\
 \begin{array}{c} V^{\mathrm{op}} \\ \uparrow f^{\mathrm{op}} \\ W^{\mathrm{op}} \end{array} & \xrightarrow{(\cdot)^*} & \begin{array}{c} V^* \\ \uparrow f^* \\ W^* \end{array}
 \end{array}$$