

$$\begin{array}{ccc}
 & \mathcal{P}(W)^n & \\
 \Phi \swarrow & & \searrow \Psi \\
 \mathrm{Pol}_k(W, V) & \xrightarrow{\Omega} & \mathrm{Hom}_{k\text{-Alg}}(\mathcal{P}(V), \mathcal{P}(W))
 \end{array}$$