$\left(\operatorname{Id}_{U}\times\operatorname{Tr}_{X,Y}^{Z}(f)\right)^{\star}(u,x)=\uparrow\{u\}\times\left\{y\in Y\mid\bigvee_{z\in Z}\langle y,z\rangle\in f^{\star}(x,z)\right\}.$