$$x \in g(x')$$

$$= \bigcup_{x \in g(x')} \left\{ y \in Y \mid \bigvee_{z \in Z} \langle y, z \rangle \in f(x, z) \right\}$$

$$= \left\{ y \in Y \mid \bigvee_{z \in Z} \langle y, z \rangle \in \bigcup_{x \in g(x')} f(x, z) \right\}.$$

 $(g \ \tilde{g} \ \operatorname{Tr}_{X,Z}^{Z}(f))(x') = \bigcup \operatorname{Tr}_{X,Z}^{Z}(f)(x)$