

$$Q_{-\infty}^{\#} S \cup \bar{S} = Q_{-\infty}^{\#} S \times Q_{-\infty}^{\#} \bar{S} = Q_{-\infty}^{\#} S \times \overbrace{Q_{-\infty}^{\#} \bar{S}}^T = \mathbb{U} | Q_{-\infty}^{\#} S$$

$$Q_{-\infty}^{\#} \underbrace{t | t \times S} = Q_{-\infty}^{\#} \underbrace{t \times S} \times Q_{-\infty}^{\#} \underbrace{t | \times S} = \mathbb{U} | Q_{-\infty}^{\#} \underbrace{t \times S}$$

$$Q_{-\infty}^{\#} \underbrace{t | t \times S} \ni \frac{Q}{f} \underbrace{t \times S}_{t:s}$$

$$\overbrace{\frac{Q}{f} \underbrace{t \times S}_{t:s}}^F \mathfrak{r} = f (F (t:s)) \overbrace{F}^F \mathfrak{r}$$