→ **Encoder** marginalizes from tokens to latent concepts Categorical - $\pi_{\scriptscriptstyle \mathrm{T}}$ $X_{\mathsf{Bernoulli}}$ **Decoder** marginalizes from latent concepts to tokens Bernoulli Z'Bernoulli Closed -Categorical -Bernoulli -Open π_{z} Bernoulli Categorical $\mathbf{Z}_{\text{Bernoulli}}$ $\mathbf{y}_{\text{Bernoulli}}$ Universe **Y**Categorical V Categorical $u_{\scriptscriptstyle Bernoulli}$ Closed -**Y**Bernoulli $\mathbf{Z}_{\text{Bernoulli}}$ Categorical -Bernoulli -Open π_{z} Bernoulli Categorical Universe Z Bernoulli Categorical - $X_{\mathsf{Bernoulli}}$ Bernoulli