

# Encoder-Decoder: Training Objective

For output word  $y_i$  we have:

- estimated conditional distribution  $\hat{p}_i = \frac{\exp t_i}{\sum \exp t_j}$  (softmax function)
- unknown true distribution  $p_i$ , we lay  $p_i \equiv \mathbf{1}[y_i]$

Cross entropy  $\approx$  distance of  $\hat{p}$  and  $p$ :

$$\mathcal{L} = H(\hat{p}, p) = \mathbf{E}_p(-\log \hat{p})$$