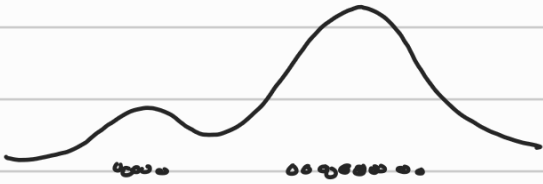


# # Generative modeling

Goal: Take as input training samples from some distribution and learn a model that represents that distribution

## Density Estimation



How can we learn  $P_{\text{model}}(x)$  similar to  $P_{\text{data}}(x)$ ?

## Latent variable models

- ① Autoencoders and Variational Autoencoders (VAEs)
- ② Generative Adversarial network (GANs)

Can we learn the true explanatory factors  
eg latent variables, from only observed data?