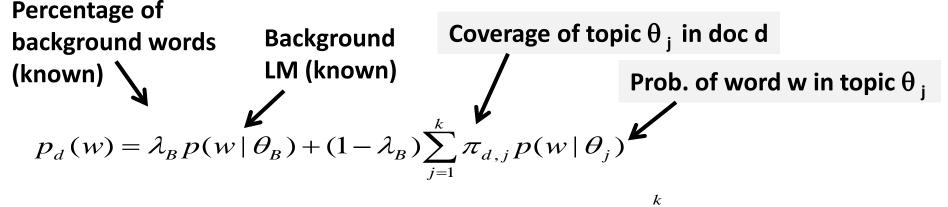
Probabilistic Latent Semantic Analysis (PLSA)



$$\log p(d) = \sum_{w \in V} c(w, d) \log[\lambda_B p(w | \theta_B) + (1 - \lambda_B) \sum_{j=1}^k \pi_{d,j} p(w | \theta_j)]$$

$$\log p(C \mid \Lambda) = \sum_{d \in C} \sum_{w \in V} c(w, d) \log [\lambda_B p(w \mid \theta_B) + (1 - \lambda_B) \sum_{j=1}^k \pi_{d,j} p(w \mid \theta_j)]$$

Unknown Parameters: $\Lambda = (\{\pi_{d,j}\}, \{\theta_j\}), j=1, ..., k$

How many unknown parameters are there in total?