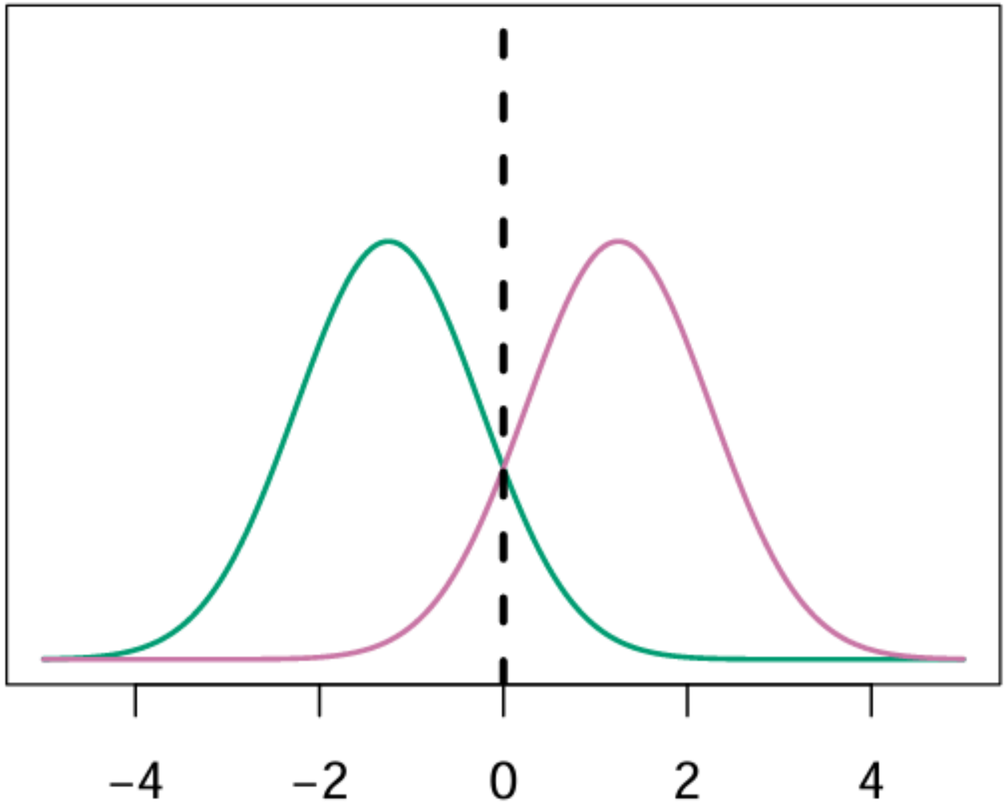
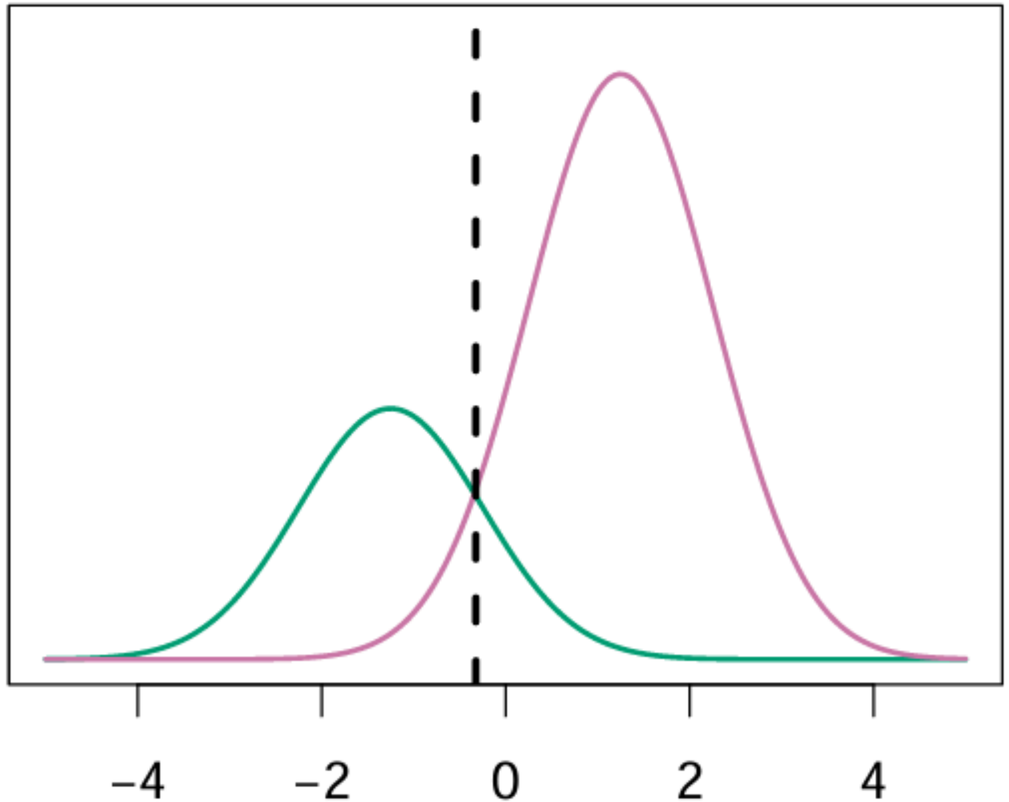
$\pi_1 = .5, \quad \pi_2 = .5$



$\pi_1 = .3, \quad \pi_2 = .7$



Linear Discriminant Analysis (LDA)

- the dashed lined represents the Bayes decision boundary (Bayes Classifier)

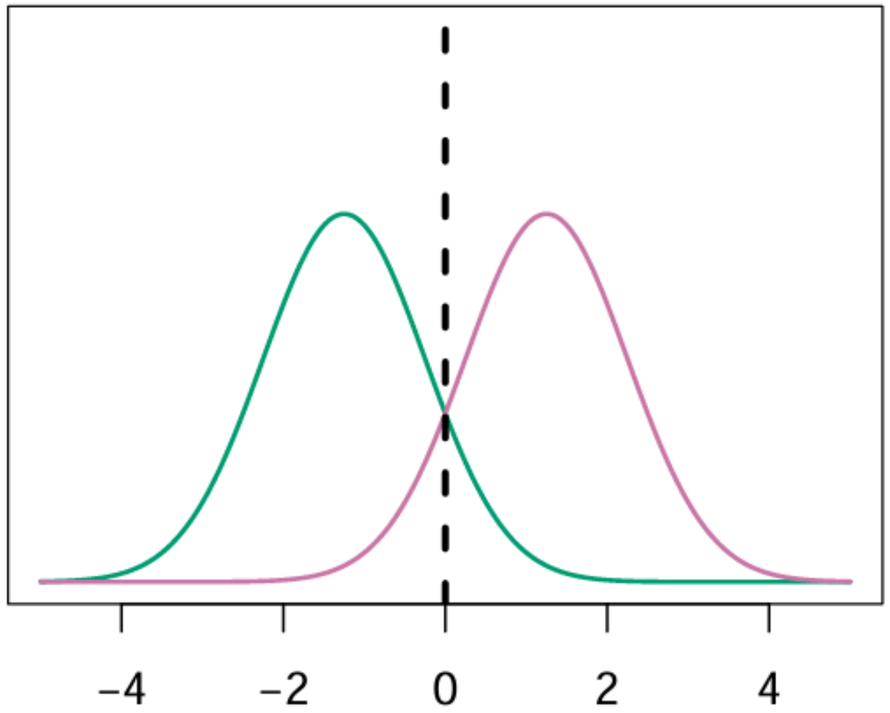
- we classify a new point to which density is highest

- when priors are different, take them into account and compare $\pi_k f_k(x)$

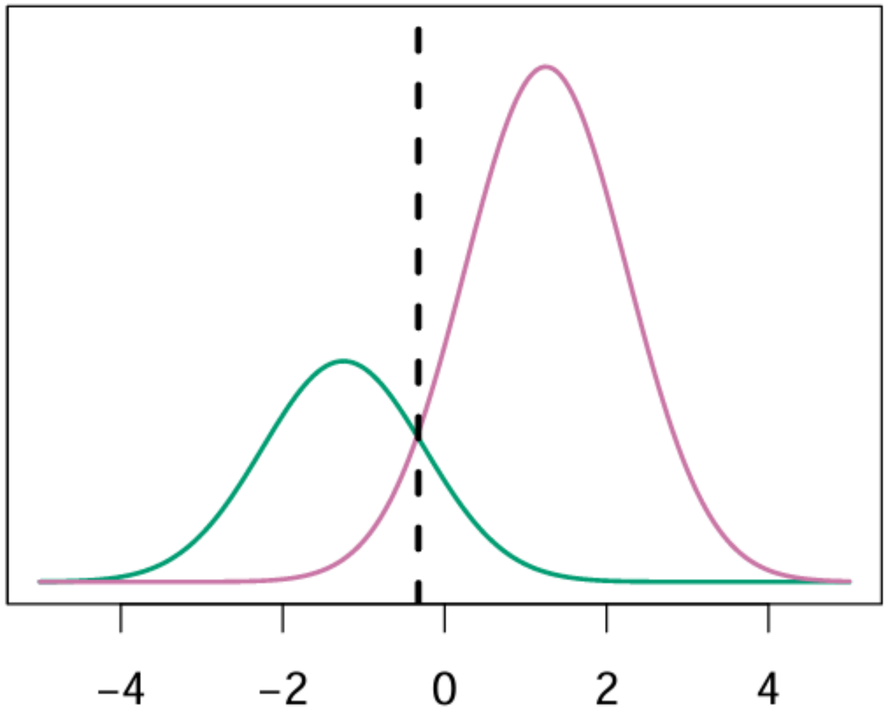
- on the right, we favor the pink class the decision boundary has shifted to the left

Linear Discriminant Analysis (LDA)

π_1=.5, π_2=.5

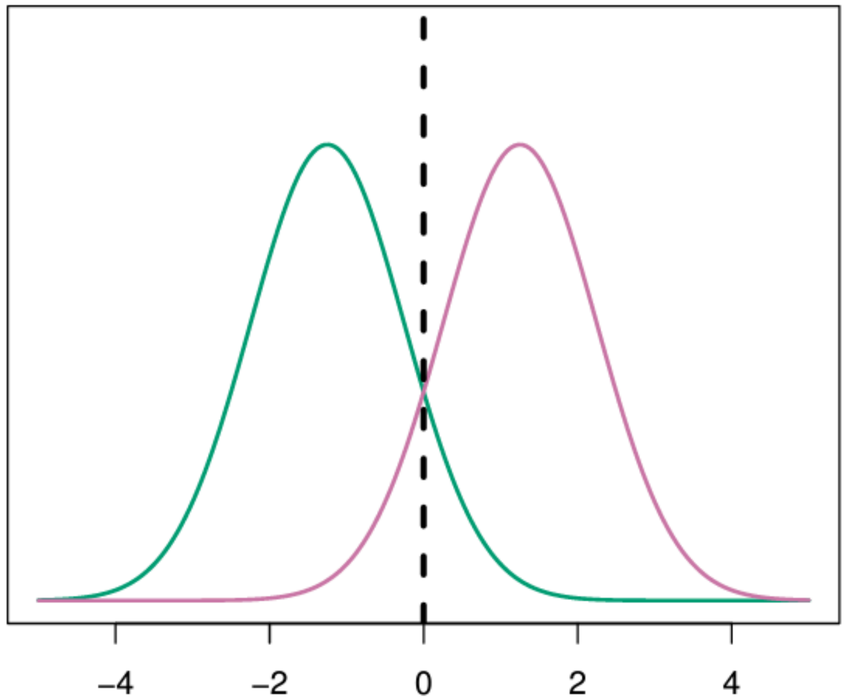


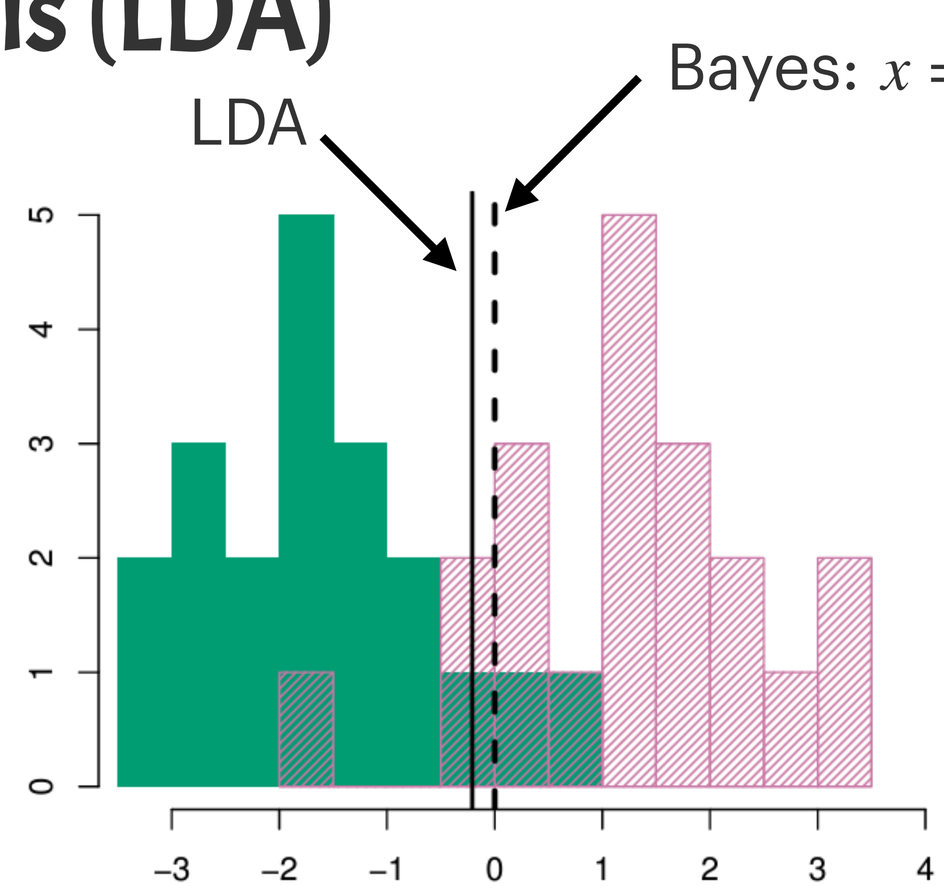
π_1=.3, π_2=.7



- the dashed lined represents the Bayes decision boundary (Bayes Classifier)
- we classify a new point to which density is highest
- when priors are different, take them into account and compare $\pi_k f_k(x)$
- on the right, we favor the pink class the decision boundary has shifted to the left

Linear Discriminant Analysis (LDA)





$$\mu_1 = -1.5, \mu_2 = 1.5,$$
$$\sigma_1^2 = \sigma_2^2 = 1, \pi_1 = \pi_2 = 0.5$$