

15 Mar 13

$$(Y_i | F) \sim F$$

(extra votes) ①

$$F \sim p(F) \left\{ \begin{array}{l} DP \\ PT \end{array} \right\}$$

no

F.

~~$N(\mu, \sigma^2)$~~

$N(\mu, \sigma^2)$

learn

$$\left\{ \begin{array}{l} DP \\ PT \end{array} \right\} \rightarrow \left\{ \begin{array}{l} DP \\ PT \end{array} \right\}$$

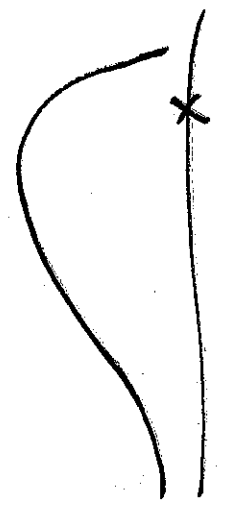
mixture

labels

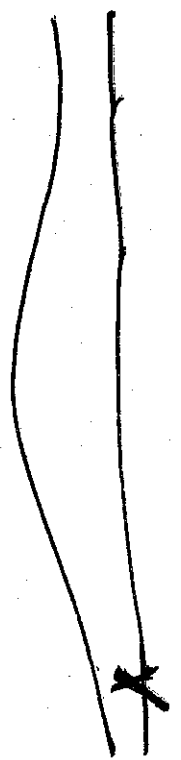
$$y = \sum \beta + \epsilon \quad K \sim N(\mu_0, \sigma^2)$$

②

$(y_i | x_i, \beta)$



$(x_i | y_i, \beta)$



$$\begin{bmatrix} y \\ x_1 \\ x_2 \end{bmatrix}$$

$$m_1 = \left(y_i - \beta_0 - \beta_1 x_i + \epsilon_i \right)$$

$$m_2 = \left(y_i - \beta_0 - \beta_1 x_i + \beta_2 x_i + \epsilon_i \right)$$

③

AIC

DIC

Bayes factors

somewhat larger models

trying for
good out-of-

sample
predictions

~~Bayes factors (BF)~~

BIC

special case of

BF with
unit information

IS.

somewhat smaller models

trying for

consistency

if $m = \{m_1, m_2, \dots\}$ $p(m_{max} | D_n, B)$

m_{max} is k $\rightarrow 1$ as $n \rightarrow \infty$

when BIC can't be used:

AIC

⊕

when n is large

k_j are low

do count

ex. Aspirin water

analysis

μ_1^2 - diffuse

$$(0 | \mu_1^2) \sim N(\mu_1, \sigma^2)$$

$$z = 1, \dots, I = 6$$

$$(z_i | \theta_2) \sim N(\theta_2, \sigma^2)$$

study

↑

known

based on $n_i \approx 1000$

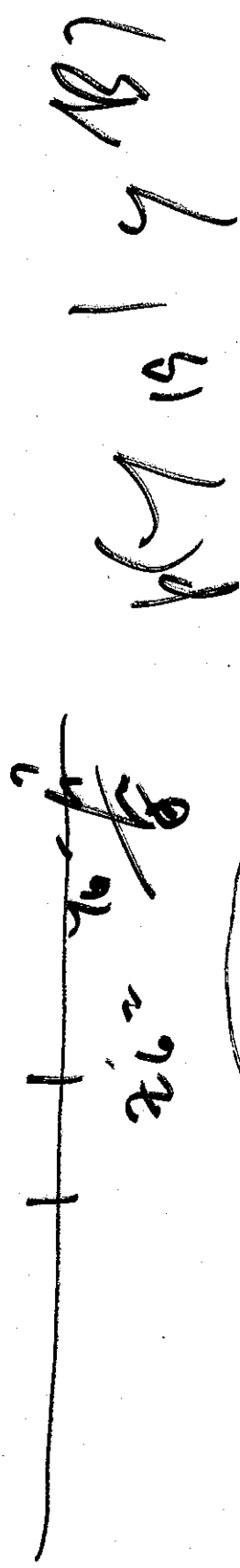
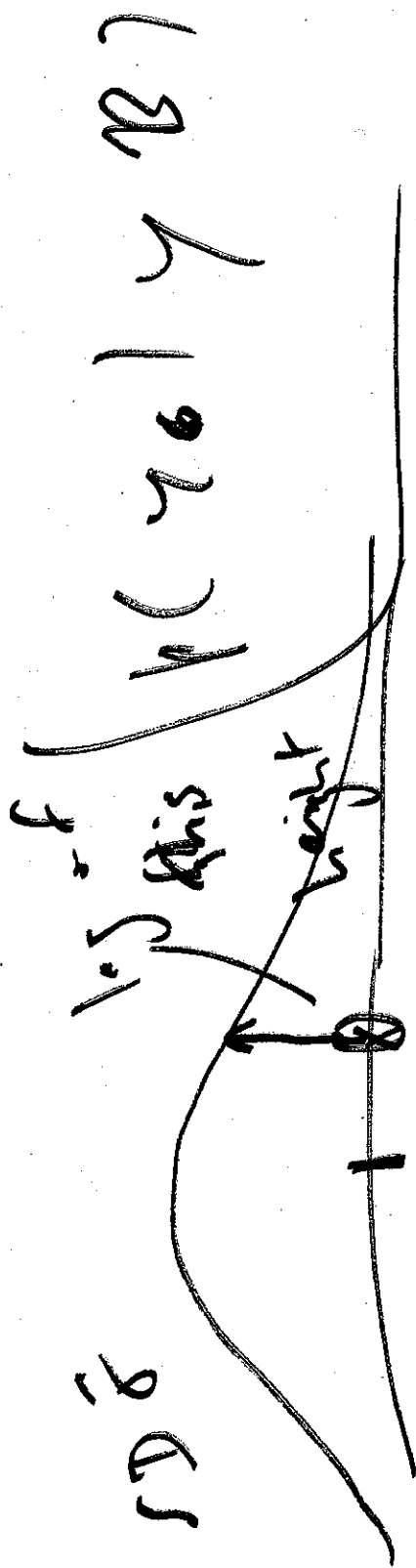
patients 5000

~~Aspirin~~

BIC mixture

+

5



$$R_1 = \frac{w}{2} \left(\frac{l}{2} \right) = \frac{wl}{4}$$

$$R_2 = \frac{wl}{4} + \frac{wl}{2} = \frac{3wl}{4}$$