

$$b = \frac{\text{cov}(u, u)}{\text{var}(y)} = \frac{\text{var}(u)}{\text{var}(y)} = \frac{\sigma_u^2}{\sigma_y^2} = h^2$$

(10)

$$h^2 < 1$$

with  $h^2$ : heritability

Intercept:

$$y_i = \mu + u_i + e_i$$

$$y = \mu + u + e$$

$$\text{var}(y) = \text{var}(\mu) + \text{var}(u) + \text{var}(e) + 2\text{Cov}(\mu, u) + 2\text{Cov}(\mu, e) + 2\text{Cov}(u, e)$$

$$= \text{var}(u) + \text{var}(e)$$

Regression:  
allowing for  
slope  $b$ :

~~$$u_i = b(y_i - \mu)$$~~

$u \leftarrow y$   
Breeding values

