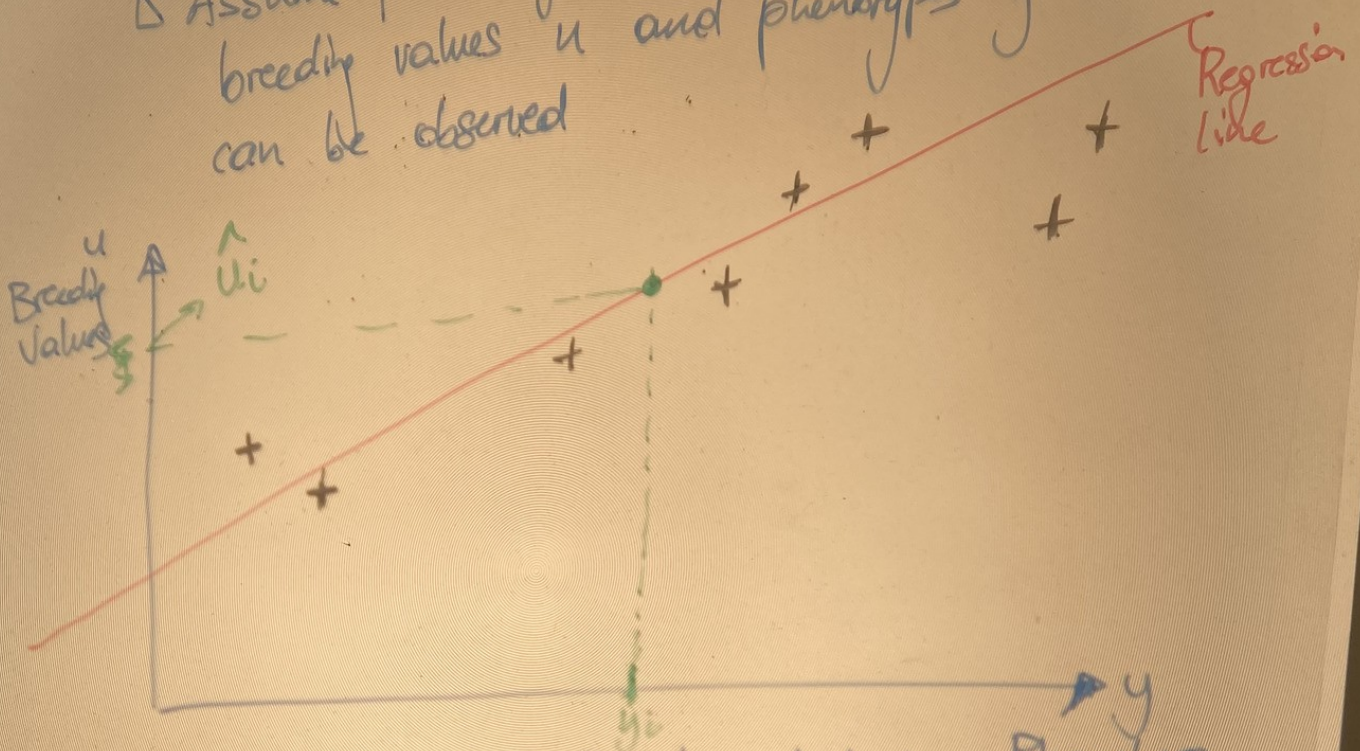


## 7

### a Predictions ( $\hat{u}$ ) of breeding values $u$

△ Assume for a group of animals, breeding values  $u$  and phenotypes  $y$  can be observed



△ For new animal  $i$  with observed phenotype  $y_i$ , its breeding value can be predicted using the regression line.

$$\hat{u}_i = \mu_u + b \cdot (y_i - \mu_y) \quad \text{with} \quad \mu_u : \text{Mean of } u$$

$$b = \frac{\text{cov}(u, y)}{\text{var}(y)} : \text{Regression coefficient} \quad \mu_y : \text{Mean of } y$$