

Estimated True Score  $\hat{T} = r_{XX}(X - \mu) + \mu$   
Observed Score  $X \sim \mathcal{N}(\mu = 100, \sigma = 15)$   
Reliability Coefficient  $r_{XX} = \{.80, .85, .90, .95, .98\}$

Probability true score  $T$   
is less than threshold  $\tau$

Threshold  $\tau = 70$

$$P(T \leq \tau) = \Phi \left( \frac{\tau - \hat{T}}{\sigma_{T-\hat{T}}} \right)$$

Standard Normal Cumulative  
Distribution Function  $\Phi()$

Standard Error of the Estimate

$$\sigma_{T-\hat{T}} = \sigma \sqrt{r_{XX} - r_{XX}^2}$$