2 ...

$$\mathsf{E}[x_{ij}|T] = 2p_i^T$$

$$\mathsf{Var}(x_{ii}|T) = 2p_i^T$$

 $Var(x_{ii}|T) = 2p_i^T (1 - p_i^T) (1 + f_i^T),$  $Cov(x_{ii}, x_{ik}|T) = 4p_i^T (1 - p_i^T) \varphi_{ik}^T$ 

$$egin{aligned} \langle \mathsf{x}_{ij}, \mathsf{x}_{ik} | T 
angle &= 4 oldsymbol{p}_i^{\ \prime} \, \left( 1 - oldsymbol{p}_i^{\ \prime} 
ight) arphi_{jk}^{\ \prime}, \ &\left( 1 - F_\mathsf{IT} 
ight) &= \left( 1 - F_\mathsf{IS} 
ight) \left( 1 - F_\mathsf{ST} 
ight), \end{aligned}$$

$$\left(1-f_{j}^{T}
ight)=\left(1-f_{j}^{L_{j}}
ight)\left(1-f_{L_{j}}^{T}
ight),$$

 $F_{\mathsf{ST}} = \sum w_j f_{L_i}^T$ 

$$\hat{\rho}_{i}^{T} = \frac{1}{2} \sum_{j=1}^{n} w_{j} x_{ij},$$

$$\stackrel{\text{new}}{\longrightarrow} \overset{\text{a.s.}}{\longrightarrow} \mathcal{O}_{i}^{T}.$$

E, Var, Cov, round, sgn, logit,  $x_{ii}$ ,  $p_i^T$ ,  $\hat{p}_i^T$ ,  $F_{ST}$ ,  $F_{IT}$ ,  $F_{IS}$ ,  $f_B^A$ ,  $f_i^T$ ,  $f_i^{L_j}$ ,  $f_{L_i}^T$ ,  $\varphi_{ik}^T$ ,  $\varphi_{ik}^{L_{jk}}$ ,  $f_{L_{jk}}^{\mathsf{T}}$ ,  $f_{L_i}^{L_{jk}}$ ,  $R_{\mathsf{ST}}$ ,  $\phi_{\mathsf{ST}}$ ,  $G_{\mathsf{ST}}$ ,  $G'_{ST}$ ,  $\hat{F}^{\text{sample}}_{ST}$ ,  $\hat{F}^{\text{indep}}_{ST}$ ,  $\hat{F}^{\text{WC}}_{ST}$ ,  $\hat{F}_{ST}^{Hudson}$ ,  $\hat{F}_{ST}^{HudsonK}$ ,  $\hat{\varphi}_{ik}^{T,std}$ ,  $\hat{f}_i^{T,\text{std}}$ ,  $\hat{f}_i^{T,\text{stdII}}$ ,  $\hat{f}_i^{T,\text{stdIII}}$ ,  $\hat{F}_{\mathrm{ST}}^{\mathrm{std}}$ ,  $\hat{F}_{\mathrm{ST}}'$ ,  $\hat{F}_{\mathrm{ST}}''$ ,  $\hat{F}_{\mathrm{ST}}''$ ,  $\hat{\varphi}_{ik}^{T,\mathrm{new}}$ ,  $\hat{f}_{i}^{T,\mathrm{new}}$ ,  $\hat{F}_{\mathrm{ST}}^{\mathrm{new}}$ ,  $\hat{\varphi}_{ik}^{L_{jk},\text{beagle}}, \hat{f}_{i}^{L_{j},\text{beagle}},$  $\overline{p(1-p)}'$ ,  $A_{ik}$ ,  $\hat{A}_{min}$ .

 $\hat{\varphi}_{ik}^{T,\text{new}} \xrightarrow{\text{a.s.}} \varphi_{jk}^{T}.$