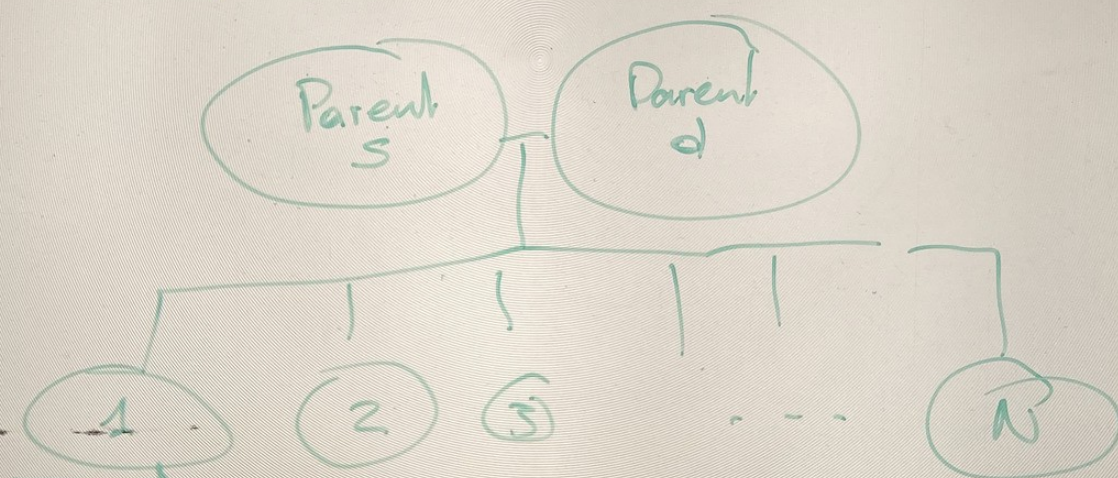☐ <u>Decomposition</u> :

$$U_i = \tfrac{1}{2} U_s + \tfrac{1}{2} U_d + m_i$$

• m_i is a deviation, this means over a large Number (N) of offspring from parents s and d, the average over all mendelian sampling terms (m_i) is zero.

$$\Rightarrow \frac{1}{N} \sum_{i=1}^{N} m_i = \frac{1}{N} \left(m_1 + m_2 + \dots + m_N \right) = \emptyset$$

$$U_1 = \tfrac{1}{2} U_s + \tfrac{1}{2} U_d + m_1$$
$$U_2 = \tfrac{1}{2} U_s + \tfrac{1}{2} U_d + m_2$$
$$U_N = \tfrac{1}{2} U_s + \tfrac{1}{2} U_d + m_N$$

$$\frac{1}{N} \sum_{i=1}^{N} m_i = \emptyset$$

$$\frac{1}{N} \sum_{i=1}^{N} U_i = \frac{1}{N} \left(U_1 + U_2 + \dots U_N \right) \tfrac{1}{2} U_s + \tfrac{1}{2} U_d$$