

Take  $n$  voters with competences:

$$p_1 = \frac{1}{2} + \frac{1}{2}, \quad p_2 = \frac{1}{2} + \frac{1}{2^2}, \quad \dots, \quad p_n = \frac{1}{2} + \frac{1}{2^n}.$$

The probability of a correct majority decision, as  $n$  grows, is:

$$\lim_{n \rightarrow \infty} \Pr[S_n > n/2] = \frac{1}{2}.$$

Even though the competence of each voter is above  $1/2$ , the probability of a correct majority decision does not go asymptotically towards 1.