

$$\begin{array}{l} ? \\ ? \\ (\Omega, \mathcal{F}, P) \\ n \in \\ X_1, X_2, \ldots, X_n \\ X_i \in \\ \{0, 1\} \\ X_i = \\ 1 \\ \text{den} \\ \text{Fall} \\ \text{nach} \\ \text{rechts} \\ X_i = \\ 0 \\ \text{den} \\ \text{Fall} \\ \text{nach} \\ \text{links} \\ P(X_i = \\ 1) = \\ p \\ P(X_i = \\ 0) = \\ 1 - \\ p = \\ q \\ p = \\ q = \\ 0.5 \end{array}$$

$$\begin{array}{l} X_i \\ X_i \\ \Omega = \{1, 0\} \text{und} P(X_i = x) = \{p \text{ wenn } x = 1 - p \text{ wenn } x = 0 \end{array}$$

$$\begin{array}{l} X_i \sim \\ \mathcal{B}_p^n \\ S_n^n \\ S_n \\ ? \\ i \in \\ \{0, 1, \ldots, n\} \\ S_n = \sum_{i=1}^n X_i \end{array}$$

$$\begin{array}{l} ? \\ n \in \\ N_0 \\ k \in \\ \{0, \ldots, n\} \\ \text{Bi-} \\ \text{no-} \\ \text{mi-} \\ \text{alko-} \\ \text{ef-} \\ \text{fizien-} \\ \text{ten} \end{array}$$

$$nk = \frac{n!}{k!(n-k)!}$$

$$\begin{array}{l} n^k \\ k \\ S_n \\ n^k \\ k \\ (n - \\ k) \\ p^k(1 - \\ p)^{n - k} \\ k \\ ? \\ p \in \\ [0, 1] \\ A = \{0, 1, \ldots, n\}. \end{array}$$

$$Bin_{n,p}(\{k\}) := nkp^k(1-p)^{n-k}, k = 0, 1, \ldots, n$$

$$\begin{array}{l} A = \\ S_n \\ ? \\ Bin_{n,p}(\{k\}) \\ \{0, \ldots, n\} \\ n, p \\ S_n \sim \\ S_n \sim \\ Bin_{n,p} \\ S_n \\ X_i \sim \end{array}$$