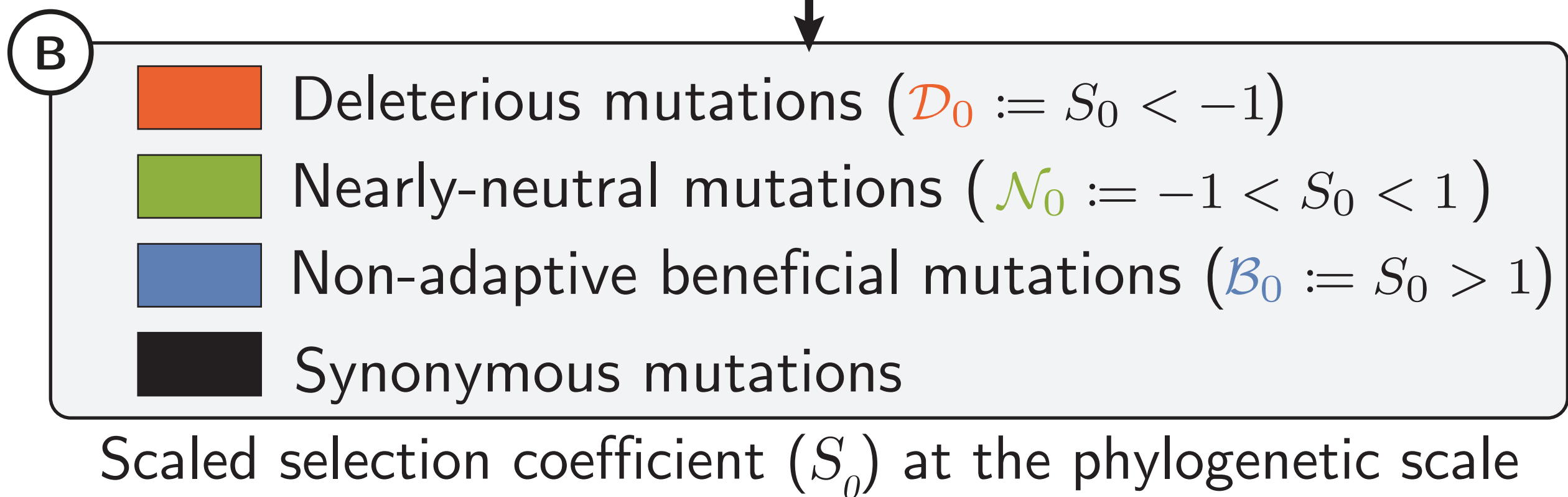
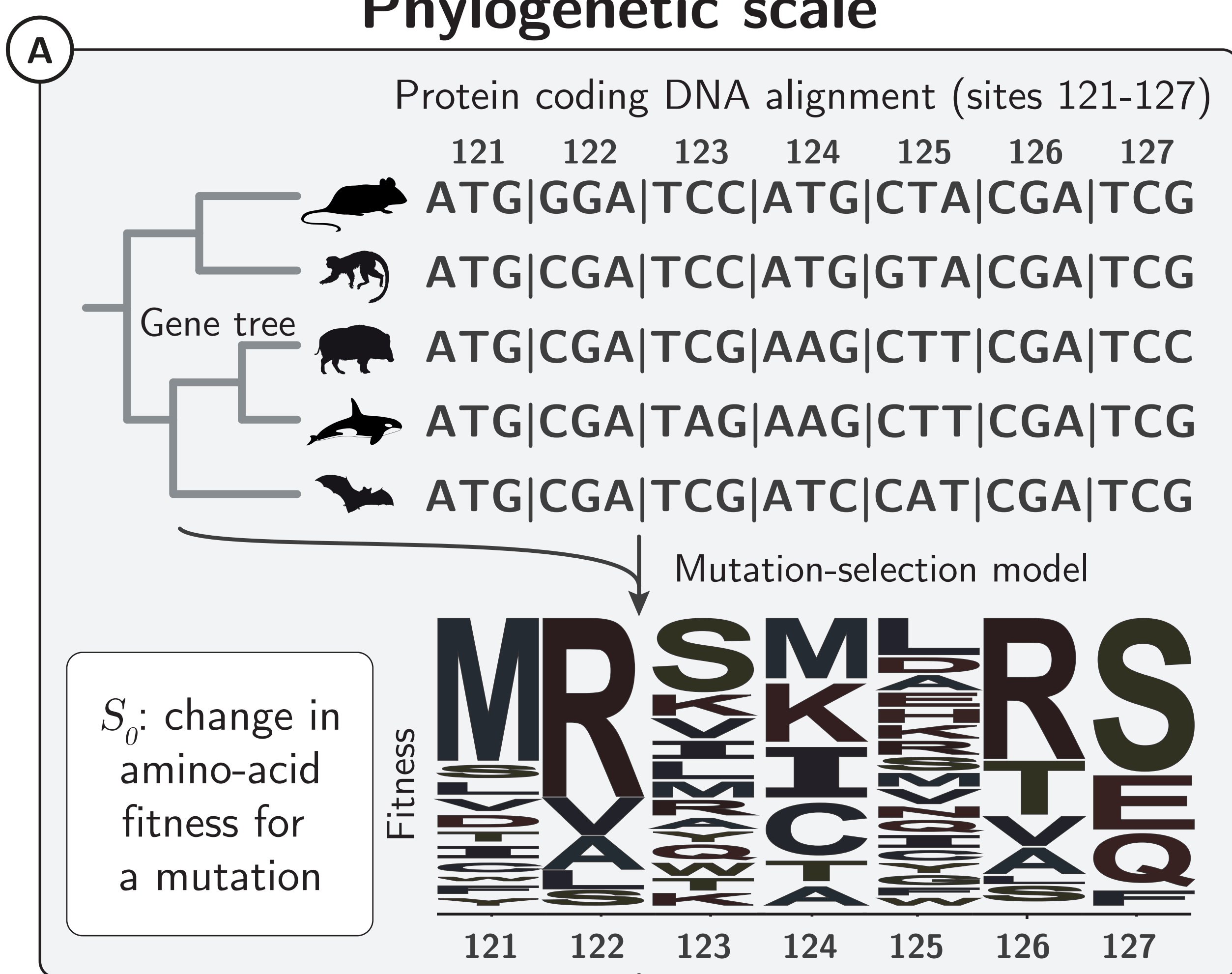
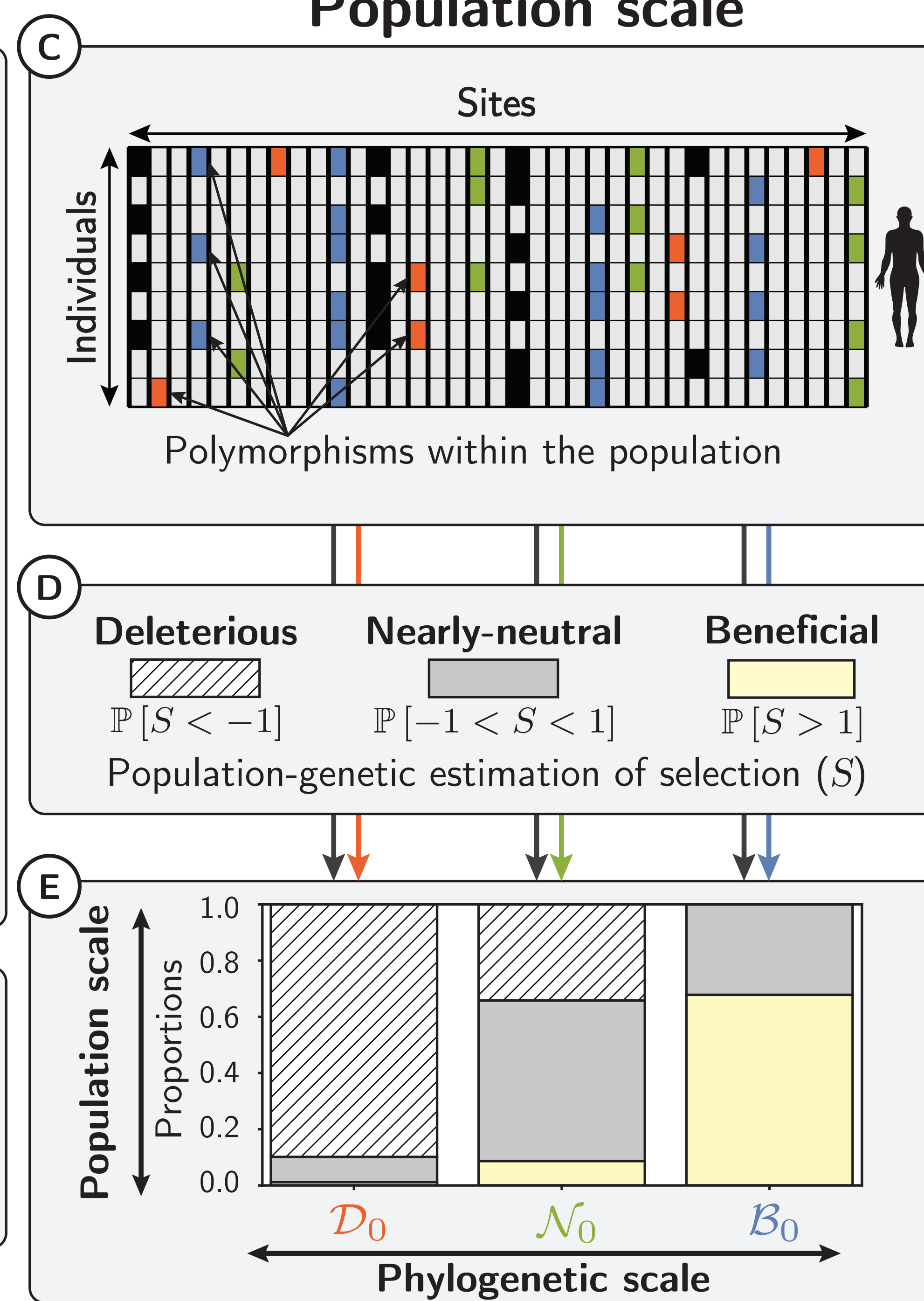


# Phylogenetic scale



# Population scale



Population scale  $\longrightarrow \mathcal{B} := S > 1$

Phylogenetic scale  $\rightarrow \mathcal{B}_0 := S_0 > 1$

## Precision

**F**

Among mutations predicted as non-adaptive beneficial at the phylogenetic scale, which ones are effectively beneficial in extant populations.

$$\frac{\mathbb{P}[\mathcal{B} \cap \mathcal{B}_0]}{\mathbb{P}[\mathcal{B}_0]} = \mathbb{P}[\mathcal{B} | \mathcal{B}_0]$$

## Recall

**G**

Among mutations predicted as beneficial at the population scale, which ones are non-adaptive.

$$\frac{\mathbb{P}[\mathcal{B} \cap \mathcal{B}_0]}{\mathbb{P}[\mathcal{B}]} = \mathbb{P}[\mathcal{B}_0 | \mathcal{B}]$$