Assumptions

Weak Selection Strong Mutation regime

$U > U_c$

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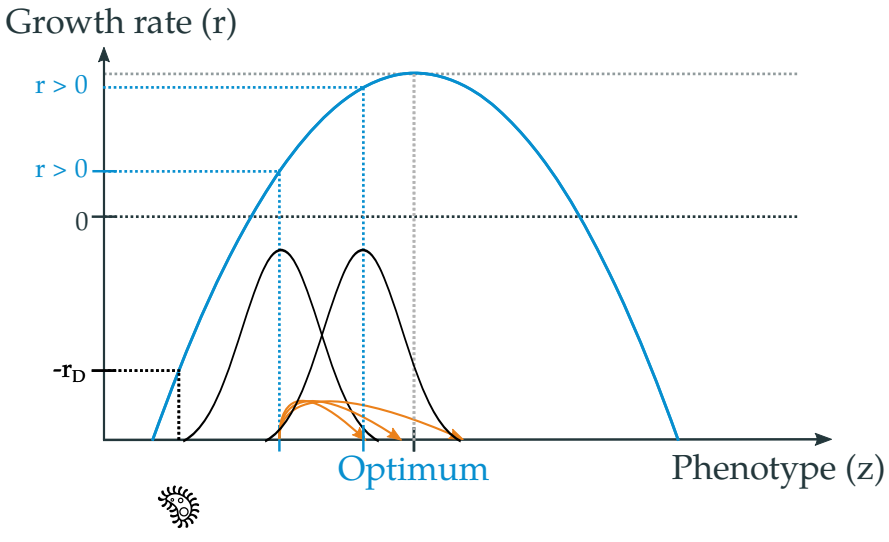

Adaptation from multiple mutations emerging from a distribution of random mutants

The demography is stochastic but the evolutionary dynamic is deterministic

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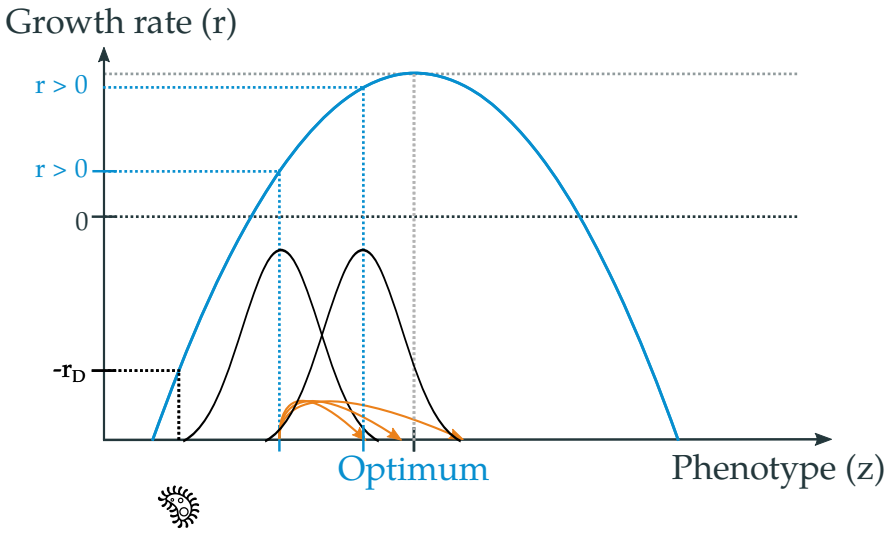

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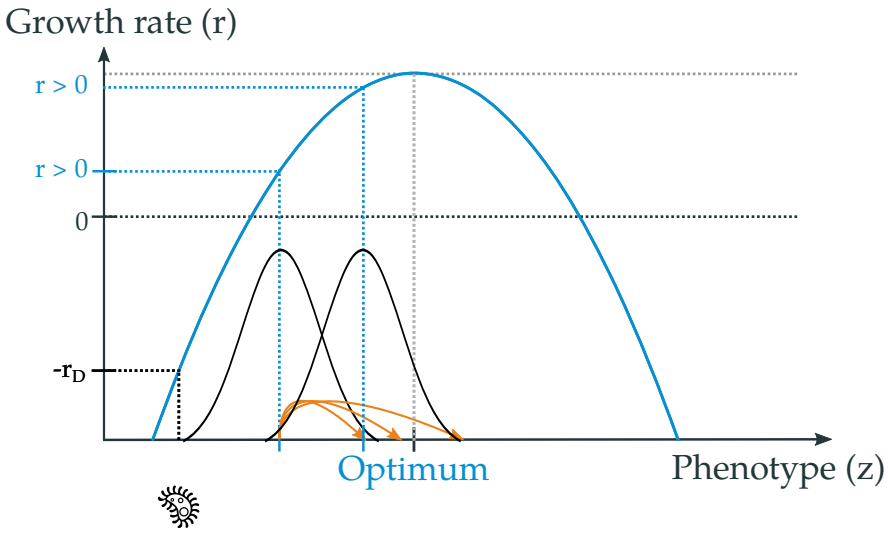

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Probability of ER → P_{Rescue}

Rate of rescue to resistant mutants escaping stochastic loss per individual → $f(r_D, r_{max}, \lambda, \theta, U)$

Deterministic approximation of the evolutionary trajectory

$$\bar{r_t} \approx < r_t >$$

Stochastic demography with inhomogeneous parameters

$$\bar{r_t}, \sigma_t \approx \sigma \approx 1$$