

Two Contrasting Interpretations of Fisher's Fundamental Theorem of Natural Selection

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Correction:

On page 8, the following

Then, by solving Eq. (17) and $dN/dt = rN$ we find that the population abundance will increase hyper-exponentially as

$$N_t = N_0 e^{rt + \sigma^2 t^2 / 2} \quad (18)$$

where N_0 and r_0 are respectively the abundance and Malthusian parameter at time $t = 0$.

$$N_t = N_0 e^{r_0 t} \quad (19)$$

This increase at the limit $\sigma^2 = 0$ with no additive genetic variance.

need to be changed to

Then, by solving Eq. (17) and $dN/dt = rN$ we find that the population abundance will increase hyper-exponentially as

$$N_t = N_0 e^{r_0 t + \sigma^2 t^2 / 2} \quad (18)$$

where N_0 and r_0 are respectively the abundance and Malthusian parameter at time $t = 0$. This increase reduces into the Malthusian law (Malthus, 1798) of exponential increase

$$N_t = N_0 e^{r_0 t} \quad (19)$$

at the limit $\sigma^2 = 0$ with no additive genetic variance.