

ERRATA
EVOLUTIONARY DYNAMICS OF A MULTI-TRAIT
SEMELPAROUS MODEL

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Figures 1 and 2 show sample time series plots of the Darwinian equations (3) for the example in Section 6. Corrected versions of these figures appear below. Changes made are in the time series plots of the traits u_1 and u_2 in Figure 1(b) and (c) and in Figure 2(a).

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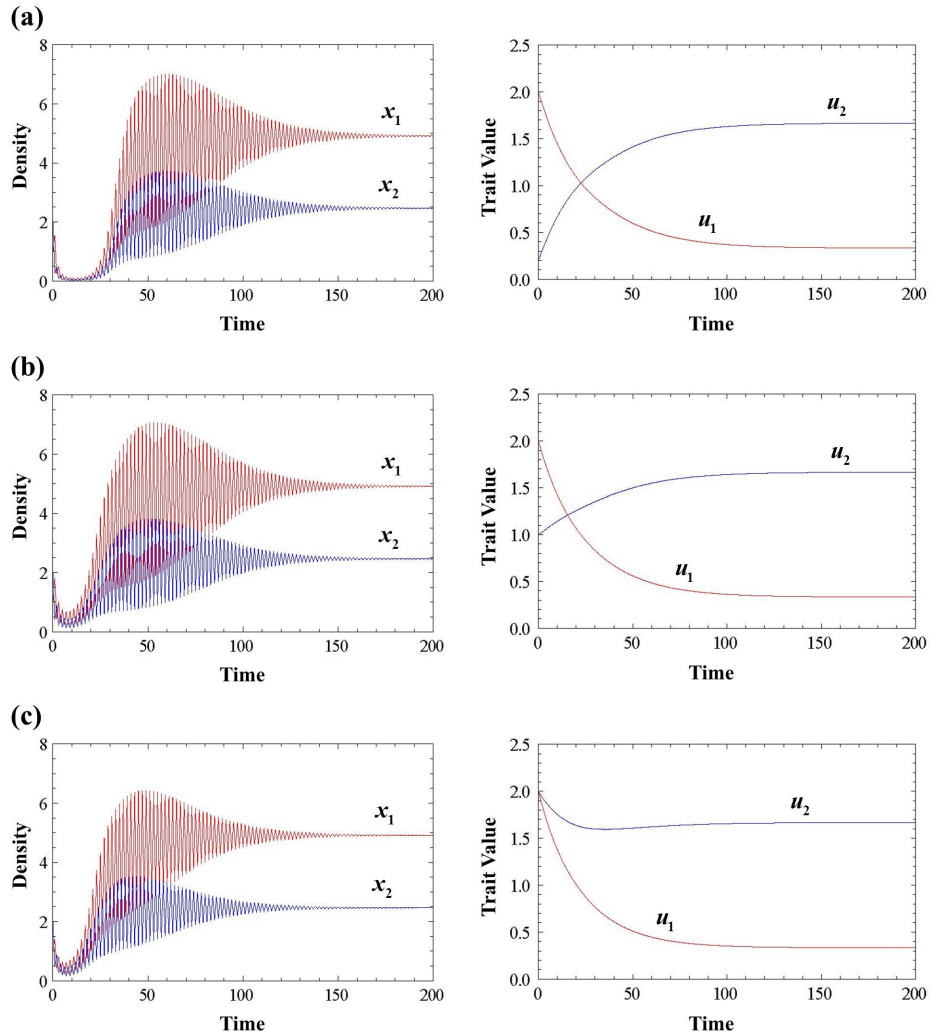


FIGURE 1. Shown are the time series of solutions of the Darwinian equations (3) with parameter values (23), variance-covariance matrix (24), and three initial conditions (25) in rows (a), (b) and (c) respectively. Calculations show $c_w^0 = -0.043 < 0$, $a_+^0 = -0.178 < 0$, $a_- = -0.010 < 0$ and $R_0^0 = 2.103 > 1$.

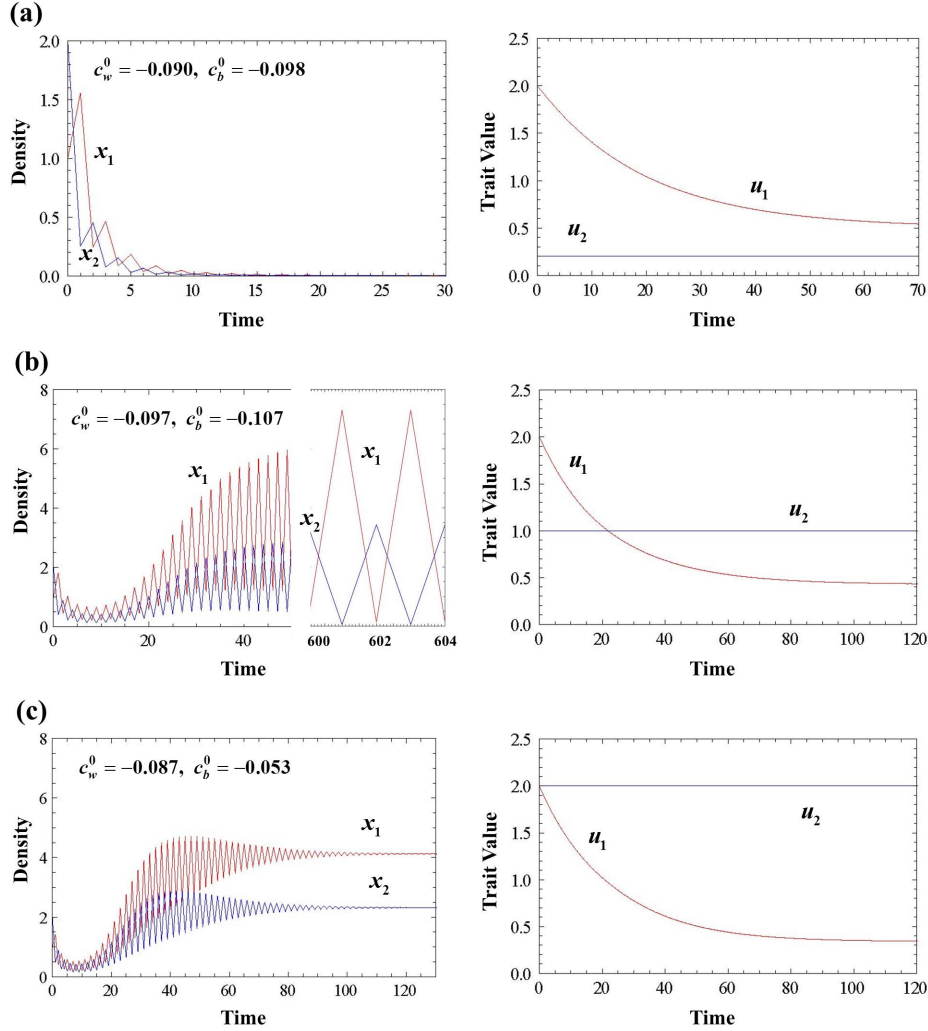


FIGURE 2. The time series of a solution of the Darwinian equations (3) when $n = 1$ with parameter values (23) and variance-covariance matrix $\mathcal{C} = (0.1)$. The trait u_2 does not evolve and is fixed at the three initial conditions used in Figure 1. In all three cases, the bifurcations of both positive equilibria and synchronous 2-cycles are forward since $c_w^0 < 0$ and $a_+^0 < 0$.

(a) $u_2 = 0.2$. Since $R_0^0 = 0.903 < 1$, the population goes extinct.

(b) $u_2 = 1$. In this case $a_-^0 = 0.010 > 0$ and the forward bifurcating 2-cycles are stable. Since $R_0^0 = 1.856 > 1$ the population approaches a synchronous 2-cycle with non-overlapping generations. Although it is not visible in the scale of this plot, the trait u_1 also oscillates with period 2.

(c) $u_2 = 2$. In this case $a_-^0 = -0.034 < 0$ and the forward bifurcating positive equilibria are stable. Since $R_0^0 = 1.856 > 1$ the population equilibrates with overlapping generations.

REFERENCES

- [1] Amy Veprauskas and J. M. Cushing, Evolutionary Dynamics of a Multi-trait Semelparous Model, *Discrete and Continuous Dynamical Systems - Series B*, **21** (2016), 655–676.

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