Correction

Shortly after publication of "Sexually Antagonistic Variation and the Evolution of Dimorphic Sexual Systems" by Colin Olito and Tim Connallon (*American Naturalist* 193:688–701), the authors noticed a mistake in the analytic results pertaining to the invasion of sexually antagonistic alleles (hereafter, "SA alleles") linked to a unisexual sterility allele.

In the section titled "Invasion of Unisexuals into Monomorphic Populations," we described how linkage to a dominant unisexual sterility allele expands invasion conditions of an SA allele relative to single-locus expectations (eqq. [5] and [7] and surrounding paragraphs). These results mistakenly conditioned on the single-locus invasion threshold for the sterility allele being met exactly. Specifically, we substituted $k = 1 - 2C\delta$ from equation (3) when deriving equation (5) as well as $k = (1 + C(1 - 2\delta))/(1 - C)$ from equation (6) when deriving equation (7). Equations (5) and (7) are mathematically correct for these conditions, but they do not provide general expressions for when the two-locus invasion conditions for SA alleles become more permissive than single-locus predictions. Below we briefly present the correct general condition for each model under the assumptions described in the article. To avoid confusion, we reference equations from the article by their original numbers and the corrected equations with lowercase roman numerals.

Generalization of equation (5). Under arbitrary levels of selfing and inbreeding depression ($0 \leq C, \delta \leq 1$), the conditions for invasion of a haplotype linking a codominant ($h_f = h_m = 1/2$) female-benefit SA allele and dominant male-sterility allele (AM_2 in the gynodioecy model, corresponding to $\lambda_{AM} > 1$) are more permissive than the single-locus SA invasion condition for female-beneficial allele invasion when

$$r < \frac{2 - s_m - k(2 + s_m) + C(2 + s_m + k(s_m + 4\delta - 2) - 8\delta) - 4C^2\delta(1 - 2\delta)}{C(1 + k)(s_m + 4\delta - 2) - (1 + k)(2 + s_m)}.$$
(i)

Equation (i) shows that greater reproductive compensation, inbreeding depression, and selection against the male-benefit allele (higher k, δ, and s_m) all act to reduce the threshold level of linkage that expands invasion conditions for the female-benefit allele (the critical r in eq. [i] increases), whereas increased selfing (higher C) increases the requisite level of linkage (the critical r decreases). We can confirm our mistake by substituting $k = 1 - 2C\delta$ (from eq. [3]) into equation (i) and simplifying, which recovers our original equation (5).

Generalization of equation (7). For the androdioecy model, invasion of a haplotype linking the male-benefit SA allele and a female-sterility allele (aM_2, corresponding to $\lambda_{AM} > 1$) is more permissive than the single-locus SA invasion criterion when

$$r < \frac{2 - s_f - k(2 + s_f) + C(1 + k)(2 - s_f) + 2C\delta(s_f(1 + k) - 2)}{(1 + k)(C(2 - s_f(1 - 2\delta)) - 2 - s_f)}.$$
(ii)

In equation (ii), greater reproductive compensation, inbreeding depression, and selection against the female-benefit allele (higher k, δ, and s_f) all reduce the threshold level of linkage that expands the two-locus invasion conditions for the male-benefit allele (the critical r in eq. [ii] increases), whereas increased selfing increases the requisite level of linkage (the critical r decreases). Substituting $k = (1 + C(1 - 2\delta))/(1 - C)$ (from eq. [6]) into equation (ii) and simplifying recovers our original equation (7), confirming the mistake. This error may cause confusion because we emphasized in the article that increased selfing expands the conditions for invasion of a male-beneficial SA allele in the androdioecy model. While this is true under the limited conditions imposed by the substitution, the critical level of recombination described by equation (ii) declines with increased selfing (higher C).

We made the same error in appendix C when deriving results for a dominance reversal at the SA locus ($h_f = h_m = 1/4$; eqq. [C2], [C3]). The correct expression for the gynodioecy model under dominance reversal and obligate outcrossing ($C = 0$) is

$$r < 1 - \frac{8}{(1 + k)(4 + s_m)}, \tag{iii}$$

which should replace equation (C2). The corresponding result for the model of androdioecy is identical to equation (iii), except with s_f replacing s_m, and should replace equation (C3).

We note that these errors affect neither the main results of the article nor its conclusions. We apologize for any confusion our mistakes may have caused.

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