



Correction to: A Multi-stage Representation of Cell Proliferation as a Markov Process

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Correction to: Bull Math Biol (2017) 79:2905–2928 <https://doi.org/10.1007/s11538-017-0356-4>

The original version of this article unfortunately contained a mistake. It has been corrected with this correction.

Equations (9) and (10) were transcribed incorrectly.

Equation (9) originally read

$$\frac{d^k M_k}{dt^k} = 2 \left(\frac{k}{C} \right)^k M_k.$$

In fact, we should first have introduced scaled variables $m_j = M_j e^{kt/C}$, for $j = 1, \dots, k$.

Equation (9) should then have read

$$\frac{d^k m_k}{dt^k} = 2 \left(\frac{k}{C} \right)^k m_k.$$

The original article can be found online at <https://doi.org/10.1007/s11538-017-0356-4>.

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Similarly, Eq. (10) originally read

$$M_j = \left(\frac{C}{k}\right)^{k-j} \frac{d^k M_k}{dt^k}, \quad \text{for } j = 1, \dots, k-1.$$

It should have read

$$m_j = \left(\frac{C}{k}\right)^{k-j} \frac{d^{k-j} m_k}{dt^{k-j}}, \quad \text{for } j = 1, \dots, k-1.$$

The equation should have been for the m_j s and not the M_j s, and the order of the derivative was incorrect.

In addition, after Eq. (11), z should be defined as “the first k^{th} root of unity,” not “the first n^{th} root of unity.”

The expression on the right-hand side of Eq. (16) is also missing a factor of z^r in the numerator of the fraction inside the sum.

Originally, it read

$$M(t) = \frac{1}{2k} \sum_{r=0}^{k-1} \frac{2^{1/k}}{2^{1/k} z^r - 1} \exp\left((2^{1/k} z^r - 1)kt/C\right).$$

However, it should have read

$$M(t) = \frac{1}{2k} \sum_{r=0}^{k-1} \frac{2^{1/k} z^r}{2^{1/k} z^r - 1} \exp\left((2^{1/k} z^r - 1)kt/C\right).$$

In the top line of Eq. (25), the subscript n on \hat{M}_n should have been a k leading to the corrected system

$$\frac{d\hat{M}_j}{dt} = \begin{cases} \lambda_1 \left(2\hat{M}_k - \hat{M}_1 - \hat{M}_1 \hat{M}_k\right), & \text{for } j = 1, \\ \lambda_1 \left(\hat{M}_{j-1} - \hat{M}_j - \hat{M}_j \hat{M}_k\right), & \text{for } j \neq 1. \end{cases}$$

Since these were just transcription errors, they were corrected for in later equations and did not effect the results of the paper, but simply made it harder to follow the working.

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