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To
Editor,
Journal of theoretical Biology,

October 2, 2023

Initial submission of manuscript titled: "Gompertz growth as infinitely correlated non-local growth"

Respected Editor,

We hereby submit a manuscript where we show that the Logistic and the Gompertz models commonly used in population biology can be connected with a novel framework based on the microscopic domain. In doing this we connect the Gompertz model with a ubiquitous growth-activating field justified by physical and mathematical principles. This adds to the fundamental understanding sought for the phenomenology of the Gompertz model (see e.g. the work of Željko Bajzer). Our analysis is not entirely surprising as the literature is sprinkled with examples of Gompertz growth as a result of a ubiquitous field, including its first discovery. Nevertheless, we reinforce the current understanding with a mathematical framework and make explicit what perhaps has been implicit or unrecognized before.

In creating this novel framework, we have also been able to include other common statistical functions in a unified understanding of growth processes, based on varying dependence in spacetime. These functions include the Gaussian, Exponential, and the Poisson.

We hope that you will consider this manuscript for publication in your journal as it seems fitting both from a mathematical and from a phenomenological standpoint.

Thank you for your consideration.

Sincerely yours,

Matz Andreas Haugen