

I have reviewed the preprint entitled " **The discernible and hidden effects of clonality on the genotypic and genetic states of populations: improving our estimation of clonal rates** (DOI <https://arxiv.org/abs/1902.09365>) by Solenn Stoeckel, Barbara Porro, Sophie Arnaud-Haond. This is an interesting manuscript, which I really enjoyed to read. I appreciate that authors present us individual-based simulations varying population sizes, rate of clonality, number of generations, subsampling etc. to give us insight how the clonality is theoretically associated with commonly used genotypic and genetic indices. The authors also tackled sample size, which effects the indices, and developed guidelines to infer clonality, which to my knowledge, biologists missed so far for population genetics analyses of clonal and partially clonal organisms.

Although the manuscript is overall well written I'm asking for some changes to be done. They will improve understandability of the preprint. Below, I go through these and other concerns:

Introduction:

Although the introduction is well written in the terms that the authors provide a good theoretic framework, I found confusing that a) authors refer in their study to partial clonality only, although for simulations they used the rate of clonality ranges from 0 to 1, representing thus also the strict sexual, and strict asexual reproduction. I have also problem with the term "rate of clonality", which in my opinion, wasn't explained and defined, but it is used throughout the entire manuscript. Do the authors understand the rate of clonality as a proportion of individuals in the population that do not undergo sexual reproduction (*sensu* Halkert et al. 2005)? If so, then they have to take into account that depending on the life cycle of the organism, the rate can be constant over time (as they used fixed rates in the simulations) or fluctuates owing to periodic events of sexual reproduction representing a sort of partial clonality (which however to my understanding was not simulated). Please provide clear definitions for both (partial clonality and rate of clonality you study), make it clear in the text and check this out throughout the text of introduction.

Page3, Line 5: I don't understand the following part of sentence: This mode of reproduction called partial clonality (PC) is particularly relevant for... *ensuring human development*... Is this linked to pathogenetic species? Unless the readers are skilled in prokaryotic, protozoan and other pathogens, and parasites, this is far to obvious.

Page7, Lines with mutation rates for both, somatic and sexual reproduction. Please provide references for the rates and provide an explanation for selecting them.

Fig.1, Fig3. (and S2a, S2b, S2b; S5aS5b) Is it possible to select different scale on y-axis to increase the visibility and readability of those different colours?

Discussion: Here in general, less detailed description of some examples could be used. I am positive that in the coming years a case-by-case re-evaluation of the clonal studies will happen (as the authors suggest), this is how the science usually works and improves.

Pages 22-23, please avoid repeating of previous sentences and shorten these two pages.

Pages 24-25, I would suggest to shorten the story (or completely skip) the story on *Alexandrium minutum*?

Page 26, Is the study on *Aphis glyceris* really appropriate to be stressed here, when in that study two-time steps sampling was used, which is not related to any simulation done by authors?