Review of: "On the Origin of Aging by Means of Natural Selection"

Amal Kassab[1]

1 McGill University

Potential competing interests: No potential competing interests to declare.

In his review “On the Origin of Aging by Means of Natural Selection” the author touches upon an interesting topic with regards to the role of aging in the process of natural selection. The approach is new and interesting, however, the review lacks proper structure to address it in a manner that is clear and concise. Thus, I propose to restructure the paper by starting with a short introduction that outlines the views that are present today, not just mention the names of the scientists with reference, but provides the view concisely so that the topic is approachable for those who may not be aware of the theories involved. Then present a short list of counter arguments that might be expanded upon in later sections. that way the reader is familiar by the end of page 1 or max 2 of what is to come later on and goes through the debate presented, followed by the conclusion and most importantly relevance. As interesting the topic is, it has to stress somewhere why this is an important topic to be approached.

Apart from this structural issue, aging today is recognized as a systemic failure that is due to the accumulation of “toxins” in the blood, based on the large number of heterochronic parabiosis experiments conducted, in which older mice were able to sustain a more youthful state by young blood alone. Other theories followed that this might be due to the aging of the organisms' “filtration” system, leading to, as in all fluidic systems, aggregation of toxins within the working fluid thereby signaling the cells via their extra-cellular milieu that it is time to “shut down”. The relevance of this aging related findings to NS and DP is that this phenomena can be regarded from a standpoint of complex systems, versus simpler ones. As such, some bacteria can withstand extreme temperatures, anaerobic conditions and even go to stasis and revive once conditions are favorable. Even direct physical injury, as in slicing of various parts of some organisms does not seem to effect them physiologically. This might bring to view that the more complex the system, the harder it is to maintain longevity and optimum conditions. While at the same time, following the Darwinian principle, longevity might hinder NS and organismal progression into a more advanced state. So it seems that aging is an integral part of progression towards a better version of a species from a global standpoint, while individually, it comes with the hefty price of physiological deterioration.

On an even more global scale, it can be argued that the simpler microbial organisms that seem to have ultimate resilience, can present a global back-up for life, in the face of cataclysmic catastrophes that may ultimately wipe out the more fragile and complex life forms. thus presenting a ready blueprint for life renewal once the conditions become favorable again.