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Information Theory

17 June 2024

Deducing ITOA's Veracity

Information Theory of Aging is the most robust and practical out of current theories explaining human age. Aging is a disease best explained as information loss. Damage theory does not account for damage's possible necessity towards human personal growth. A cellular error is difficult to define, thus, error theory also lacks veracity. When is an error actually an adaptive mutation? When is damage actually adaptive mutation? Plus, information theory of aging is uniquely accessible to computer assistance.

Determinism is not rigorous (without at least partial free will, no one could fundamentally choose to focus on life, eliminating the possibility of reason), errors are difficult to define. Two main theories of aging have been categorized as "programmed and error theories" (Jin 2010). Both programmed and error theories are less rigorous than information theory of aging. Within the programmed theory of aging, are many other theories that rest too heavily on assumed details. Damage theory is within aging explained by errors. Damage generally is easily perceived as a threat to human well-being. However, damage does not robustly explain aging as much as information loss.

Damage is easier to identify than errors are. "If DNA repair were perfect and no mutations ever accumulated, there would be no genetic variation—and this variation serves as the raw material for evolution" (Nature). Perhaps some errors, aiding an individual's survival,

should be renamed adaptations. Damage is objectively an injury. An evolutionary adaptation is NOT an error.

Information defines enough to make ITOA the most robust and practical explanation of aging. “The Information Theory of Aging (ITOA) states that the aging process is driven by the progressive loss of youthful epigenetic information, the retrieval of which via epigenetic reprogramming can improve the function of damaged and aged tissues by catalyzing age reversal”(Lu 2023). ITOA is also practical because epigenetic reprogramming, through feasible details, alleviates aging. Tissues only begin the process. Soon ITOA, at least in theory, can catalyze dramatic life extension.

Information theory, deserving a formal definition, is “a mathematical representation of the conditions and parameters affecting the transmission and processing of information”(Markowsky 2024). Information theory may intimately link computer science, engineering and aging theory. Thus, allowing anti-aging technology. Nature is already modeled by computers, potentially to extend human life.

Cellular Automata is nature modeled by “simple computer programs”(Wolfram 2018), potentially automating the creation of a life extension vaccine.

Unfortunately, death may be inevitable, a sequel to this essay, to hopefully map the afterlife, will be Critical Rationalist Parapsychology.

Works Cited

Jin, Kunlin. "Modern Biological Theories of Aging." *Aging and disease* vol. 1,2 (2010): 72-74. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995895/>.

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"Of course, not all mutations are 'bad.' But, because so many mutations can cause cancer, DNA repair is obviously a crucially important property of eukaryotic cells. However, too much of a good thing can be dangerous. If DNA repair were perfect and no mutations ever accumulated, there would be no genetic variation—and this variation serves as the raw material for evolution. Successful organisms have thus evolved the means to repair their DNA efficiently but not too efficiently, leaving just enough genetic variability for evolution to continue."

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