Review of: "The Convergence of Intelligence and Longevity"

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Potential competing interests: No potential competing interests to declare.

The author should change their abstract as humans are not the longest living animal, some sponges more than 2000 to about 10,000 years, some mollusks greater than 300 years, Red Sea urchins more than 200 years as wirh Greenland shark, Rougheye rockfish more than 200 Bowhead whales 211 or more, etc... While he notes the frequency of certain cancers in different organ systems in humans, he fails to acknowledge the relationship between size and cancers, especially as size relates to increased numbers of cells.

The author's use of basal metabolic rate is limited. de Magalhaes, et al. (2007) found that basal metabolic rate did not correlate with longevity in eutherian mammals (especially Primates) or birds when controlled for body size and developmental period. Yet Kitazoe, et al., (2019) found that the mass-specific basal metabolic rate (msBMR) declines with age, but varies among individual persons. Byrenormalizing the msBMR to the body mass index, (creating therenomalized msBMR, or RmsBMR) and using a population drawn from America, Italy and Japan, they found that the lowest value of theRmsBMR. The universal decline of the RmsBMR with age was associated with the mitochondrial number decay. Loss of functional mitochondria is an indication of aging and loss of functionality. The

centenarians in the population had the lowest rate of loss, correlated tothe RmsBMR. The essential point seems to be the effect on and especially damage and repair of mitochondria.

It is also clear that the author's theory suffers from a lack of reference to the evolutionary history of hominin populations. Graves (2000) argues that individuals in human populations were relatively short-lived until the invention of sedentism, food production, and social complexity, while Dunbar has proposed that social life was a generator of both longevity and intelligence. Issues around the distribution of intelligence in human populations must account not only for the late appearance of social and material complexity in human evolution, but also for the role of violence and disease in maintaining general g levels. If all young men are sent to war, what role does intelligence play in avoiding death in brutal conflict? Smart and less intelligent individuals die in a firestorm as in Dresden or Hiroshima in WWII, and so do they die irrespective of IQ in diseases like the Black Plague, Smallpox, and cancers. Also, even where small advantages can be found, these are not related to significant fertility variation. The author should attempt to challenge my discussion of theories of longevity in evolution (Caldararo, 2021). Also, he or she might find a useful review of the evolutionary history of the hominin brain in my book, *Big Brains and the Human Superorganism*, especially in reference to the development of sociality.

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