

Re: Body Temperature

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From: Tim Tyler (tim_at_ttllock.org)

Date: 07/07/04

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Steve Harris wrote or quoted:

Re: Good specific metabolic rate * lifespan = constant article:

- > *Big exceptions to the rule are primates like capuchins and humans, and*
- > *we both have very large brain/body wt ratios. So evidently large*
- > *brains are such a good evolutionary trick against predation that it's*
- > *worth it for evolution to spend time repairing us, and thus we age*
- > *more slowly metabolically and get 3 billion heartbeats in a lifetime,*
- > *instead of the standard billion for mice, cats, cows, etc.*

There are other explanations for an effect of large brains on lifespan that don't mention predation – so the effect of brain power on lifespan via reduced predation is not all that evident.

The more usual arguments about the effect of large brains on lifespan invoke a mixture of developmental plasticity and neotony to explain the effect.

Large brains are there to help cope with a complex variable environment. Large-brained organisms are less hard-wired up at birth, and more programmable by environmental influences. Environmental programming takes its time to occur – so brainy creatures tend to have long childhoods – and typically are not sufficiently competent to reproduce for some time after being born.

The whole large-brain, long childhood thing can be produced by twiddling some developmental rates downwards – and this tends to retard both development and aging.

Longer childhoods and later puberty tend to stretch out the whole developmental program – including its final stage: senescence.

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