

Ask A Genius 98 – Life and Death (Part 13)¹
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[Beginning of recorded material]

Rick Rosner: We've been talking about death. We've been talking about evolution (Moran, 2006).² We should tie those things together. One, death is kind of tied into evolution (Kucharski, 2013). Evolution only pushes towards things that work in terms of helping the species reproduce (Rifkin, 2013). In other words, evolutionary forces tend to preserve and promote reproduction (Ibid.). That's the whole key to evolution. You have to make the next generation and the generation after that to survive as a species.

¹ Four format points for the session article:

1. Bold text following and including "Scott Jacobsen:" or "S:" is Scott & non-bold text following and including "Rick Rosner:" or "R:" is Rick.
2. Session article conducted, transcribed, edited, formatted, and published by Scott.
3. Footnotes & in-text citations in the interview & references after the interview.
4. This session article has been edited for clarity and readability.
5. Date listed is YYYY/MM/DD.

For further information on the formatting guidelines incorporated into this document, please see the following documents:

1. American Psychological Association. (2010). Citation Guide: APA. Retrieved from <http://www.lib.sfu.ca/system/files/28281/APA6CitationGuideSFUv3.pdf>.
2. Humble, A. (n.d.). Guide to Transcribing. Retrieved from <http://www.msvu.ca/site/media/msvu/Transcription%20Guide.pdf>.

² *What Is Evolution?* (2006) states:

It's important to distinguish between the existence of evolution and various theories about the mechanism of evolution. For the time being, I'm not interested in describing evolutionary theory because that's not something that requires a "definition." However, when we refer to the existence of biological evolution we must know what we're talking about. When biologists say that they have observed evolution or that humans and chimps have evolved from a common ancestor they have in mind a scientific definition of evolution. What is it?

One of the most respected evolutionary biologists has recently defined biological evolution as follows:

Biological (or organic) evolution is change in the properties of populations of organisms or groups of such populations, over the course of generations. The development, or ontogeny, of an individual organism is not considered evolution: individual organisms do not evolve. The changes in populations that are considered evolutionary are those that are 'heritable' via the genetic material from one generation to the next. Biological evolution may be slight or substantial; it embraces everything from slight changes in the proportions of different forms of a gene within a population, such as the alleles that determine the different human blood types, to the alterations that led from the earliest organisms to dinosaurs, bees, snapdragons, and humans.

*Douglas J. Futuyma (1998) Evolutionary Biology 3rd ed.,
 Sinauer Associates Inc. Sunderland MA p.4*

Moran, L. (2006). *What Is Evolution?*. Retrieved from http://bioinfo.med.utoronto.ca/Evolution_by_Accident/What_Is_Evolution.html.

Past reproductive age, there is less and less evolutionary force in favor of living (Croft et al, 2015). There's some evolutionary force, especially for sophisticated animals as ourselves because you need adults around to help raise the young (Thomas, 2013). But beyond that, there's no reason evolutionarily for people to keep living, except for some added years because evolution also isn't particularly interested in engineering—there's no particular evolutionary force in having people keel over after some arbitrary childrearing age is over (Organ et al, 2008).

The pieces of people keep going and people keep tottering on into and pushing a century (Magalhães, 2013).³ But there is an evolutionary force in people not living for a century. But there is an evolutionary force in people not living forever. It is probably not very big because people die anyway as a result of things breaking down as a result of people reaching childrearing age. But hypothetically, if there were some mechanism for people to live indefinitely, it would kinda be counter to the forces of evolution because those people—the super, super old—would be taking away resources from those animals, those people, who are still of reproductive and childrearing age.

Second, evolution doesn't care that dying makes us sad (Hutson, 2017). Again, to go back to the basic principle of evolution, which is that it favors things which help members of a species reproduce, there's very little evolutionary force behind us not feeling bad that we're going to die. There might be a little force behind it. That you can't—that a species that is depressed all of the time is a species that is probably going to be less successful than a species where the members of that species are more or less, not content but, not miserable all of the time (Ibid.).

³ *What Is Aging?* (2013) states:

To sum it up, aging is a complex process composed of several features: 1) an exponential increase in mortality with age; 2) physiological changes that typically lead to a functional decline with age; 3) increased susceptibility to certain diseases with age. So, I define aging as a progressive deterioration of physiological function, an intrinsic age-related process of loss of viability and increase in vulnerability.

*Gerontology is the branch of biomedical sciences that studies aging. In **senescence.info**, gerontology normally refers to the study of the biological process of aging, not its medical consequences. Generally, I use geriatrics to refer specifically to the medical study of diseases and problems of the elderly. Technically, gerontology includes both the biological and the medical branches of the study of aging, but since **senescence.info** is written in the context of the biology of aging, gerontology usually refers to the study of the biological aspects of aging, unless otherwise specified. Biogerontology refers specifically to the biological study of aging and is also used, usually interchangeably, with gerontology.*

Life expectancy is how long, on average, an organism can be expected to live. Longevity is the period of time an organism is expected to live under ideal circumstances. Lifespan is defined as the period of time in which the life events of a species or sub-species (e.g., a strain or population) typically occur. Lifespan and longevity can sometimes be used interchangeably, though they have slightly different meanings. For humans, lifespan and longevity are about the same in industrial nations, but when studying species in the wild, one can expect that lifespan will be lower than longevity since feral conditions are certainly not ideal for assessing longevity. For most purposes, life expectancy, average longevity, and average lifespan have the same meaning. Maximum longevity and maximum lifespan are the maximum amount of time animals of a given species or sub-species can live--typically, the record longevity for that species. The maximum longevity of humans is 122 years, recorded by the late Jeanne Calment (Allard et al., 1998).

Magalhães, J.P. (2013). What Is Aging?. Retrieved from http://www.senescence.info/aging_definition.html.

There's nothing in evolution that would force people of advanced age to feel any kind of euphoria about being dead soon. It is hard to breed things into people that don't directly affect their reproductive health.

Scott Jacobsen: There's also arguments for particular worldviews as overarching motivations to perpetuate that even further, to exacerbate or exaggerate, that tendency throughout nature in a particular species. By which I mean...

R: ...You're talking about religion?

S: Comprehensive worldviews such as religion (Ontario Consultants on Religious Tolerance, 2016). So those that enshrine extraordinary controls over the reproductive lives of the young, in particular women, and enshrine the "be fruitful and multiply" theology, for instance (Gallagher, 2012; Berkowitz, 2012; Davis, n.d.; Hall, 2013). I think this makes sense in what I've seen if you take the conversions from one religious faith to another— or out of—it is actually low in proportion to the total population of that worldview or religion (Libresco, 2015; Pew Research Center, 2015a).

If you look at simple birth rates, those belief systems tend to perpetuate themselves mostly on the rate of birth and the inculcation of those beliefs into the young (Ibid.; Pew Research Center, 2015b). Some call this indoctrination. However, I am simply giving an analysis rather than a judgment.

R: Who called religion the 'opiate of the people' (McKinnon, 2005)? Marx (McLellan & Feuer, 2016)?

S: Yes.

R: Okay. Religion is a success product, not least because it provides feelings of hope without overpromising. Religion can say, "You're going to live forever if you buy this religion. We can't show you living forever on earth, but there's a place you go after you die where you live forever and everything is great." That doesn't over-promise because it doesn't run contrary to evidence. Evidence is everybody dies, but there's no evidence what happens after – so religion can promise what it can. People want that. People want hope and salvation, so religion sells.

S: So what happens after life, and what comprises life, become very important in those frameworks of the world, right?

R: Well, yea, because we have evolved drives to want to keep living and evolution has done nothing, or does nothing, to provide us with comfort that we're not going to keep living, evolutionary forces have made us so we can't get what we want, which is to not die. So we turn to human made products, which are religion. And, more recently, medicines—there have always been medicines that claimed to help you live longer or procedures that claimed to help you live longer.

The Egyptians wrapped their people to make them successfully resurrectable according to their whole religious system. There are people who have always sold snake oil kinda medicine. Medicines that have claimed to help you live for decades longer. That's what I got.

[End of recorded material]

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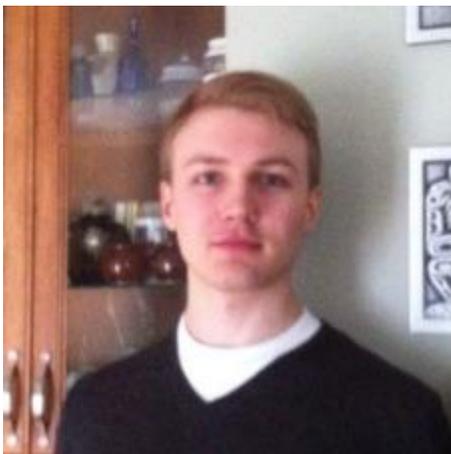
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