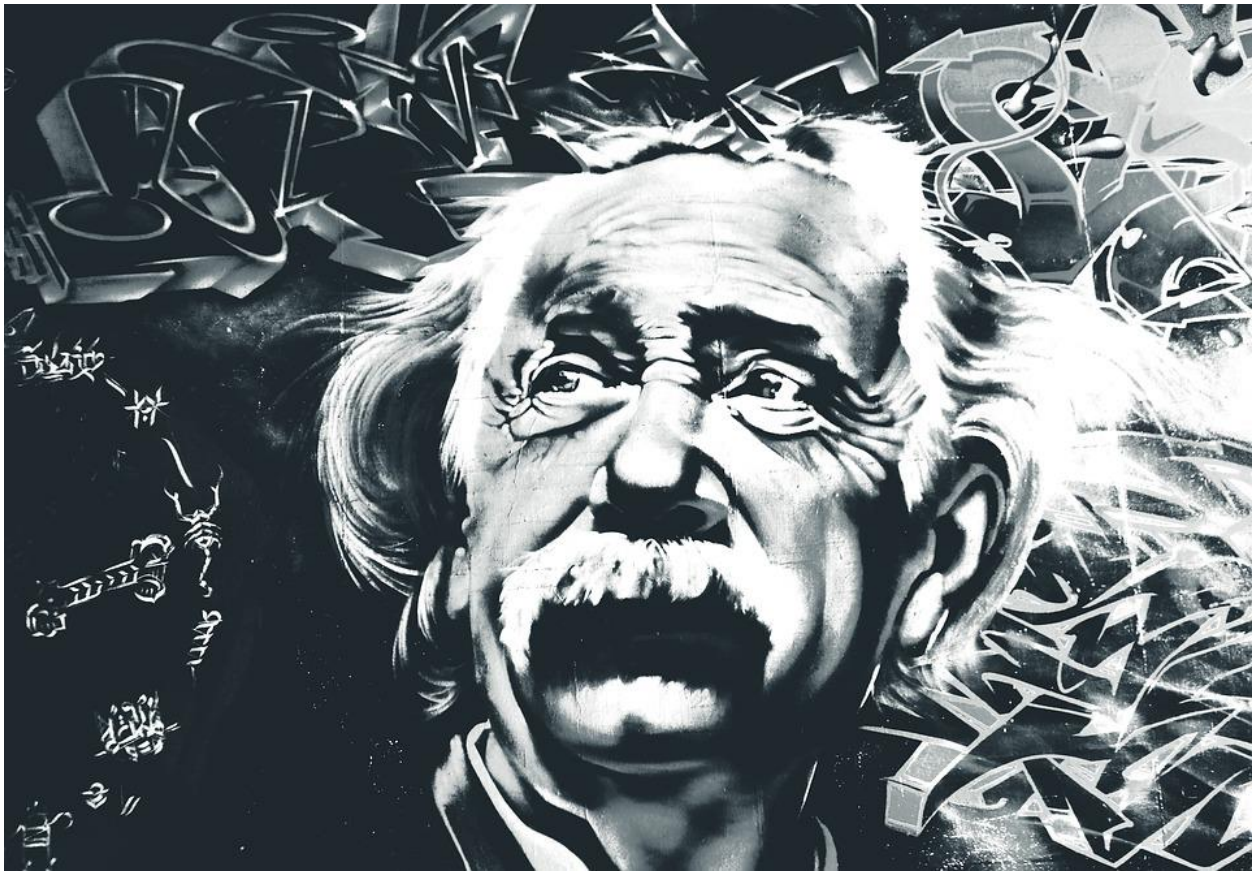


# Ask A Genius: Set III

Scott Douglas Jacobsen  
&  
Rick Rosner



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## Dedications

To three generations of women who support and tolerate me - my mom, Ruth, my wife, Carole,  
my daughter, Isabella.

Rick

To the love in my life.

Scott

# Ask A Genius 86 – Life and Death (1)

Scott Douglas Jacobsen and Rick Rosner

February 11, 2017

*\*This session has been edited for clarity and readability.\**

**Scott: Death is a profound topic. It raises profound feelings, and questions (Markman, 2008; Murphy, 2015; Alper, 2015). It raises exceptional circumstances for people, especially their own ending.**

Rick: To talk about death, we have to talk about life.

**Scott: Okay, let's talk about life *and* death.**

Rick: One reason death is so scary is that if you don't believe in an afterlife then you lose everything when you die because conscious being is the frame in which you hold everything. There's no you to remember after death.

That's summed up with the saying, "You can't take it with you." If there's no framework for you to experience what you own or any other aspect of life, then you've lost everything. To take a step back, we can talk about some reasonable substitutes for life.

Some substitutes for life are enduring fame. That you create a work of art that lives on after you. That you create descendants that live after you. That you ascribe to values that live on after you. That you lived a full life and accomplished what people, or at least you, acknowledge to be a life well-spent.

None of those are very satisfying in the minds of most people compared to losing everything, but they are among the few things that you get to keep if you don't believe in an afterlife. You don't really get to keep them, but you've been keeping score as to whether you've been living a good life or not.

That's part of your framework as to why it is a good thing to die or not, but it's not very satisfying in most people's minds. I don't know about animals. Salmon swim upstream to their deaths after spawning (Reference, 2017). Are they okay with that? Who knows? Evolution is not respectful of our feelings once our feelings don't increase the likelihood that we'll reproduce.

Evolution doesn't care what we think unless what we think influences our reproductive capabilities. Evolution doesn't care. Say there's no afterlife, but a few tens of billions of people have earnestly believed in an afterlife, an evolutionary universe doesn't particularly care that so many people have been so cruelly deceived (Palermo, 2015; PEW Research Center, 2012).<sup>1</sup>

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<sup>1</sup> *The Origins of Religion. How Supernatural Beliefs Evolved* (2015) states:

*There are many theories as to how religious thought originated. But two of the most widely cited ideas have to do with how early humans interacted with their natural environment...*

In fact, evolution cannot approve or disapprove anything, but there might be an evolutionary advantage in people wrongfully believing in an afterlife if that belief helps people to live long enough to make babies.

But if you believe in evolution, and if you believe in the current scientific framework, then just because billions of people have believed in an afterlife does not obligate the universe to conform to that belief.

So, we are on the cusp of more satisfying substitutes for life. What we want most of all with regard to life is more life, most people, or a lot of people, with bravado say, "I don't want to live past 100."

---

*Picture this: You're a human being living many thousands of years ago. You're out on the plains of the Serengeti, sitting around, waiting for an antelope to walk by so you can kill it for dinner. All of a sudden, you see the grasses in front of you rustling. What do you do? Do you stop and think about what might be causing the rustling (the wind or a lion, for example), or do you immediately take some kind of action?*

*...Humans who survived to procreate were those who had developed what evolutionary scientists call a hypersensitive agency-detecting device, or HADD, he said.*

*In short, HADD is the mechanism that lets humans perceive that many things have "agency," or the ability to act of their own accord. This understanding of how the world worked facilitated the rapid decision-making process that humans had to go through when they heard a rustling in the grass. (Lions act of their own accord. Better run.)*

*...HADD may have planted the seeds for religious thought. In addition to attributing agency to lions, for example, humans started attributing agency to things that really didn't have agency at all...*

*...Acting for a purpose is the basis for what evolutionary scientists call the Theory of Mind (ToM) — another idea that's often cited in discussions about the origins of religion. By attributing intention or purpose to the actions of beings that did have agency, like other people, humans stopped simply reacting as quickly as possible to the world around them — they started anticipating what other beings' actions might be and planning their own actions accordingly. (Being able to sort of get into the mind of another purposeful being is what Theory of Mind is all about.)*

*ToM was very helpful to early humans. It enabled them to discern other people's positive and negative intentions (e.g., "Does that person want to mate with me or kill me and steal my food?"), thereby increasing their own chances of survival.*

*But when people started attributing purpose to the actions of nonactors, like raindrops, ToM took a turn toward the supernatural...*

*...This tendency to explain the natural world through the existence of beings with supernatural powers — things like gods, ancestral spirits, goblins and fairies — formed the basis for religious beliefs, according to many cognitive scientists. Collectively, some scientists refer to HADD and ToM as the "god faculty,"...*

Palermo, E. (2015, October 5). The Origins of Religion. How Supernatural Beliefs Evolved. Retrieved from <http://www.livescience.com/52364-origins-supernatural-religious-beliefs.html>.



In that, there's the idea that at 100 then you're pretty fucked up physically and mentally. You wouldn't want to live that way anyway. But you can say, "What if you could live with the body and the brain of a 35-year-old?"

A lot of people will say with a certain amount of bravado, "Yea, I still wouldn't want that!" There's a little bit of not wanting what you can't have. There's ingrained social structures in that. But if you really pressed, especially as we move into the future, "If you could live indefinitely or for 200 years in the body of a 35-year-old or a 50-year-old, would you want at least another 200 years?"

Most people without thinking about it will still say, "No, there's a place and time for everybody. My time will be over after 100 years." But more and more people want extended life if that life can be good.

Medicine and technology are increasingly able to give us little bits of that. 100 years ago, people on average, which is weird when you talk about people who lived 100 years ago because infant and maternal mortality were really high and dragged average lifespan into the 40s, might expect to live into their 40s, 50s, and 60s.

I would suspect in the 1910s and 1920s people in their 60s were not anywhere near as healthy as anyone in their 60s now. People don't tend to think in those terms, so people don't realize medicine and technology have been giving us increased longevity. It is not something people think about a lot.

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## Ask A Genius 87 – Life and Death (2)

Scott Douglas Jacobsen and Rick Rosner

February 12, 2017

*\*This session has been edited for clarity and readability.\**

**Scott: Things continue to ramp up, though (Investopedia, 2017; Encyclopædia Britannica, 2015). There's a sense in which the natural development of technology and medicine through better, and better, science makes for a less predictable future, but one in line with the current trend lines of great gains in health span and lifespan (infoplease, 2017; National Institutes of Health: National Institute of Aging, 2015; EBioMedicine, 2015).**

Rick: We are on the verge of going from significant, but not readily noticeable, gains in health to really jarring improvements in health and lifespan, where even the World Economic Forum – which is a pretty conservative in its predictions – says the average lifespan in developed nations will rise to 100 (Gratton, 2017).

It is difficult to talk about extended lifespans because the Boomers, which I am one, live most of their lives under not the best medicine, but Boomers were born from 1945 to about 1965 – which means they spent most of their lives in the 20<sup>th</sup> century with 20<sup>th</sup> century health patterns (PEW Research Center, 2015).

So, you can talk about lifespans going to 120, but most Boomers aren't going to get to 120 because the technology hasn't been there for them. (Ibid.; The Conversation, 2013; Clark, 2009). But if you talk about a Millennial living until 190, that takes them to the year 2110, by which time science may be able to offer people lifespans of 300.

**Scott: The older you are, the less likely you are able to take advantage of the medical and biotechnology waves that will increase health span and lifespan in the future.**

Rick: Yes, it's weird. After a certain point, it is weird to talk about specific extended lifespans. Right now, it still makes sense. We're going to have more people living until 100. Some people making it past 120.

It seems to be, if you asked well-informed doctors and scientists, the absolute limit, even with current technology and medicine. But then you ask science fiction thinking like Aubrey de Grey and Ray Kurzweil, and futurist people, they think there's no reason that we can't break through that barrier and keep going (SENS Research Foundation, 2017; Kurzweil Technologies, 2017).

So, that's the main substitute for life, which is more life, in good condition. You can look at other hypothetical substitutes for life. Like, if you could live forever, but every 50 years you're going to be reset back to age 20, so you get to live from 20-70 – but once you reach 70, then you have no memory of life of 20-70, most people would take that deal.

It would be a frustrating deal. So, you could get some reluctance. Or a hypothetical deal, where you can live forever but can only remember the last 20 years of your life, I think most people would take that deal.

There are all sorts of deals that people can be offered in fantasy movies. There haven't been that many resurrection movies, but many have been popular such as *Heaven Can Wait* being made 3 times, I think.

It is about a guy plucked from heaven based on an administrative error. He files a beef with the divine bureaucracy and gets sent back into other bodies because his body is dead or cremated, or whatever. There are resurrection fantasy movies.

It's easy to explore the landscape of what we value in terms of life and life experience by imagining different hypothetical situations that offer versions of extended life subject to different rules.

You ask people, "Would you like to be resurrected without knowledge of any previous life?" Many people would say, "Yes." Then you have to ask them, "What is exactly being resurrected if you have no knowledge of what came before?" Then they say, "My soul."

So, you have the hypothetical resurrection explorations, which provide a rough indication of what we value about life such as ongoing daily experience. We like being able to remember things we've experienced. We like the things we've accumulated such as wealth, relationships.

These make ongoing daily experience at least have the potential to be pleasurable. We don't like the loss of all experience, all memory, all consciousness, forever. Given that, we can imagine that near and middle future technology will be able to an increasing extent offer substitutes for life.

You can call it extended life, substitutes for life. I think we talked about this in another context, where how much fidelity a reproduction of your mental landscape would have to have for it to be acceptable as a substitute for life or for it to be considered a continuation of your conscious being.

Anyway, we've talked about all of that before. First, crappy ones, then reasonable and acceptable ones, are coming, which goes against the scientific point of view that there is no afterlife because it is not unreasonable to think that there will be technical afterlife.

Maybe, even for people who have died before the era of technical resurrection, they may have left enough information behind for somewhat acceptable simulations of themselves to be created. So, even in a technical universe without divine afterlife, there may be afterlife.

If you left enough of an impact on the world around you, when I think about technical afterlife about people who lived before our era, I think of Jane Austen and Abe Lincoln. They're my go-to examples.

Eventually, you could reproduce those people with greater than 80% fidelity to who they were. Although, you need to define fidelity. You need to reconstruct their genes from their descendants, though the genome isn't that helpful - I estimate it at 5-10% helpful - as well as the verbal record that they left.

You're looking for a deal to be made. If you build a version of Abe Lincoln that experts estimate has 82% fidelity to whatever the real Abe Lincoln was like, his mental landscape was like, if you ask the resurrected or reconstructed thing if this is acceptable, he'd say, "Yes, more or less, I enjoy being alive in the world. I have reservations that I'm actually Abe Lincoln."

Then if you could travel back in time and ask Abe Lincoln, "Do you find that if 200 years in the future that we'd be able to do this deal and be able to reconstruct you with a reasonably high degree of fidelity? Is that something you'd want?"

In an enabling way, he'd say, "That's not entirely sucky, and it's better than nothing." For people who are alive during the era of technical resurrection, who will be able to be offered 80% and then 90% accuracy, even over 98% fidelity once these things become actualized, a level of fidelity which is like as we live and go through life and gain thought and experience, and lose thought and experience as things continue.

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# Ask A Genius 88 – Life and Death (3)

Scott Douglas Jacobsen and Rick Rosner

February 13, 2017

*\*This session has been edited for clarity and readability.\**

Rick: My eye is sore. I only have one contact in, so I am working with  $\frac{3}{4}$  of a brain. So, excuse any nonsense. We were talking about death and overcoming death. I believe that we will have the technology to continue human consciousness indefinitely because I am an informationist (Zahedi, 2015; Jürgen, n.d.; Giridharadas, 2010; n.a., n.d.).<sup>2</sup>

I believe the brain is an information processor. Consciousness is made out of information as it's being processed (Encyclopædia Britannica, 2015; Gennaro, n.d.; Van Gulick, 2016). It is a finite amount of information. There's nothing magic about it. Eventually, we will be able to replicate the processes that go into information processing in the brain and the consciousness associated with that information processing.

However, our technical mastery of thought and information processing within consciousness will eventually mean that we can do better than the human and that unaugmented humans won't be the pinnacle of existence.

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<sup>2</sup> What is Digital Philosophy? (n.d.) states:

*Digital Philosophy (DP) is a new way of thinking about the fundamental workings of processes in nature. DP is an atomic theory carried to a logical extreme where all quantities in nature are finite and discrete. This means that, theoretically, any quantity can be represented exactly by an integer. Further, DP implies that nature harbors no infinities, infinitesimals, continuities, or locally determined random variables. This paper explores Digital Philosophy by examining the consequences of these premises.*

*At the most fundamental levels of physics, DP implies a totally discrete process called Digital Mechanics. Digital Mechanics[1] (DM) must be a substrate for Quantum Mechanics. Digital Philosophy makes sense with regard to any system if the following assumptions are true:*

*All the fundamental quantities that represent the state information of the system are ultimately discrete. In principle, an integer can always be an exact representation of every such quantity. For example, there is always an integral number of neutrons in a particular atom. Therefore, configurations of bits, like the binary digits in a computer, can correspond exactly to the most microscopic representation of that kind of state information.*

*In principle, the temporal evolution of the state information (numbers and kinds of particles) of such a system can be exactly modeled by a digital informational process similar to what goes on in a computer. Such models are straightforward in the case where we are keeping track only of the numbers and kinds of particles. For example, if an oracle announces that a neutron decayed into a proton, an electron, and a neutrino, it's easy to see how a computer could exactly keep track of the changes to the numbers and kinds of particles in the system. Subtract 1 from the number of neutrons, and add 1 to each of the numbers of protons, electrons, and neutrinos.*

n.a. (n.d.). What Is Digital Philosophy?. Retrieved from  
[https://web.archive.org/web/20140928110805/http://www.digitalphilosophy.org/?page\\_id=2](https://web.archive.org/web/20140928110805/http://www.digitalphilosophy.org/?page_id=2).

Human consciousness will eventually be seen as more trivial than it is now. It will become increasingly fashionable to not give too much of a crap about human consciousness. So, the same forces of improving information analysis and processing that will help us understand processing in the brain will eventually surpass human thought.

What humans want and how humans are, at the very least, will be seen as old school, there's lots of precedent for that. We put pets to sleep. We slaughter meat animals. Even though, most people believe that pets and meat animals have consciousness.

But not consciousness that is so important that we do every possible thing to keep pets alive and to make meat animals' lives pleasant. In terms of human consciousness, our best model for our priorities is the Golden Rule (Encyclopædia Britannica, 1998; Puka, n.d.).

We know we like being conscious and alive. Under the Golden Rule, we extend that to other people, but, in a way, it applies to ourselves. Hidden within the Golden Rule, kinda, is – with the Golden Rule as treat others as you like to be treated and, maybe with the  $\frac{3}{4}$  of a brain I am veering off into nonsense – that we look to our own experience to know what we like and by extension what other humans would like.

Which is being treated with decency and being able to do stuff, hidden deep behind that is existence, based on our individual experience, offers the potential to be pleasurable. Even miserable people keep going with the idea that there are things to keep persisting for, most people aren't miserable all of the time.

Most people find existence pleasurable, which is as it should be for evolved creatures. You can't have creatures that survive to reproduce if its existence is miserable. Once we've reproduced, basically, nature gives less of a crap about the quality of our existence.

Old peoples' existences are not as pleasurable as people who are of reproductive age.

**Scott: So, you're speaking to a hoped-for future, which can be seen in a hoped-for life here and now, or in a hoped-for afterlife in the sense that these are beliefs that are held in conscious creatures. That if things are bad now, they will become good on net later on.**

Rick: Yes, I don't want to get deep into if the average person's average level of experience is miserable or not. It's not. Most peoples' experience is pretty good. What I am trying to say, in the twaddle that I've been saying, is the yardstick for quality of existence is human consciousness, it's the yardstick behind the Golden Rule.

What we like, we can assume other people like, e.g. basic principles of decency, treating other people fairly, and allowing them to continue to exist, is based on the pleasure we feel in existing. We are the yardstick. 'The measure of man is man,' someone said, I think.

**Scott: Man is the measure of all things (Dictionary.com, 2017; Encyclopædia Britannica, 2012).**

Rick: Okay, there you go. I am going to blame my one contact lens and partially shutdown half of my brain based on lack of input.

**Scott: There's another level to that, if I can add to that.**

Rick: Okay.

**Scott: You're speaking to individual experience. There's also group awareness. So, if "man is the measure of all things," if people are the yardstick for the Golden Rule, then the Golden Rule implies human consciousness, so human consciousness implies concepts of others and relationships. So, this the Golden Rule implies groups too.**

Rick: We support or approve humans in groups because groups of humans over history have helped individual humans live decent lives. Right now, in America, we are annoyed at humans in groups because humans in groups elected our most clownish and dangerous president.

Politicians we also elected are doing nothing to represent us in our displeasure with this dangerous guy and a lot of the things he stands for. We're not finding groups very helpful, but, in general, groups are helpful.

However, unfortunately, groups of humans are made up of humans, and we're still the same groups of dumbshits as 100,000 years ago. We have managed to come up with systems as groups of humans that generally work for the benefit of people.

But since we're just humans with our limited capabilities, sometimes, you get glitches like Trump.

**Scott: Is it a glitch or is it old school emotional baggage that's also evolved along with our feelings around the Golden Rule – selfishness, self-interest, xenophobia, hatred?**

Rick: Yes, when you talk about the Golden Rule, it is not just all about the pleasure of being human. All sorts of cultural values sneak in. All sorts of cultural values are taken into account.

**Scott: Where do those cultural values come from? They come from the human brain. They come from ancient evolved capacities.**

Rick: They come from evolution. Evolution doesn't want anything. Evolution is a force. The way evolution keeps score is the animals that are more successful at reproducing reproduce and pass on their genes.

So, evolution rewards behaviours and characteristics that contribute to survival across time, for persistence. Behaviors that contribute to persistence, to living long enough to reproduce. Our values are, more or less, rooted in those same behaviours.

Stable societies allow more people to survive long enough to reproduce. All of our values go back to evolutionary principles.



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## Ask A Genius 89 – Life and Death (4)

Scott Douglas Jacobsen and Rick Rosner

February 14, 2017

*\*This session has been edited for clarity and readability.\**

Rick: If everybody is given a fair chance under democratic American values, we embrace those values because we consider ourselves everybody. One way that the American system has been glitchy lately is more and more people don't consider themselves anybody or everybody as a group member who needs collective protection, but only as an individual who can survive on their own without government.

So, you have these more selfish politicians being elected. People are looking at themselves and deciding that they don't need support group action because they can survive just fine on their own. Everything is based on evolved human preferences, values, characteristics. Humans are limited.

As we build more sophisticated ways of processing information, of experiencing the world, of being in groups, old school basic unaugmented human existence will – once a significant segment of the population is living under different cultural standards based on being unaugmented or on more powerful ways of processing information and experiencing information – be seen as old school, primitive, clunky, and the world will no longer be primarily catering to them.

The idea of preserving island-like human existence, which is the idea of individual human existence locked into their skulls without augmentation or intimate networking will seem like keeping a Model T running. There will become a certain amount of prejudice against the grainy, clunky type of information processing done in unaugmented human brains.

Everything that is made is made with human interests in mind, but once we become more powerful in processing and experiencing things then the augmented human market will shrink or be neglected. It will be like radio versus TV versus the Internet. Radio used to be the greatest thing. In the 20s and 30s, people would gather around the radio.

There'd be super popular shows. *Jack Armstrong*, *Super Boy*, *The Shadow* with production value as great as could be imagined. All of the most talented people were there such as Jack Benny and Milton Berle, not always considered the most talented. The best comedians were on the radio. The best singers were on the radio. All of the best because it was considered a sophisticated medium.

Now, it isn't. Broadcast radio is full of garbage and packed with ads and yammering morons who aren't talented enough to make it in other media. The same thing will happen with information processing. Unaugmented human information processing will no longer be the ultimate in existence. The entities that are more powerful than us will look at our unaugmented human was of being and will think, "I can see how they experience, perceive, and think about things, but

their way of being is not as powerfully existent as my way of existing, my friends, and the people I'm linked to."

The yardstick, man will never be the measure of all things. The yardstick will be the dominant, most powerful means of experiencing and analyzing the world. It won't be absolute. It won't be like *homo sapiens* driving Neanderthals out of existence. The coming AI plus built-ins, the coming means of existence will be somewhat tolerant of all means of existence.

There'll be a whole bunch of ways of experiencing the world with fungible consciousness, which is consciousness that can traded around, budded around, cut into pieces, and merged. There will have to be some tolerance for all ways of processing information because we'll be in a *Star Wars* cantina of consciousness and of AI.

There will be a zillion different ways of using computing power and consciousness, and information processing. Those different ways will have to not always be at each others' throats because there will still be a lot of cooperation. There will still be the Golden Rule. So, there will be tolerance for old school humans.

But there will also be looking down on old school humans in the way we don't let a giraffe be president. You can't do it! A giraffe can't handle the task. A giraffe can't drive a school bus. If it came down to – there's that ethical dilemma problem – if you're driving a car and the breaks don't work, do you hit the giraffe or hit the kid? You're going to hit the giraffe.

So, even as we acquire the means to make consciousness replicatable, those same means will make human consciousness less precious. Also, the way we group together via social media will become more powerful and probably won't be called social media. The way that we share thoughts, we primarily share thoughts via words.

Eventually, we'll come up with more powerful means of sharing existence with each other. We share video and still pictures with each other. Eventually, we'll be able to share emotional or conscious frameworks that include the information of experience more directly. We'll be able to share experience more directly.

Being able to experience more directly and being able to link consciousnesses, maybe not completely all of the time but, more intimately than now may devalue the need to continue to exist as an individual consciousness.

If this is the year 2130, and you've been alive for 140 years, and you've been sharing your thoughts via whatever the thought sharing social media of the time is, if you've been sharing thoughts since 2060, for half of your life, for 70 years, maybe, there are enough of your thoughts out there in the world and, maybe, you're used to sharing thinking functions with the people you're intimately, and whatever else, linked with.

So, you don't feel a desperation to keep existing in your 70-year-old body. You share experiences and philosophies. They've been out there for 70 years. Maybe, there's enough of

you out there linked with other people that it doesn't matter too much to the one of you that is part of this worldwide net of consciousness.

The net of consciousness may have enough of you via what you've shared for decades, so that not that much of you is lost as your individual human experience ceases. There's the idea that if you're linked up with enough other brains for long enough, then the loss of one brain doesn't matter because what was once confined to one brain is now distributed among a bunch of other information processing systems.

You can imagine, to further confuse things, say, it's 2080. You're born in 1990. You're 90-years-old. Your body is no longer as fun to live in as it used to be, and you're looking at resurrection packages.

Maybe, your brain isn't as functional. You're in some show room, where you're meeting with a salesperson to find out how much existence you want to preserve – as your brain is replaced, as you move into cyberspace.

You're looking at various means of replication and replacement of consciousness. A salesperson says, "Full duplication of every single one of your memories as near as we can do it runs from \$3.8 million. Or, you can go for the economy preservation at \$1.8 million. We will preserve the most important memories."

We replace some of the stuff that you don't access much with generic memories. You're 90-years-old. The salesman says, "How much do you really need to remember about high school back in 2005-2008? We can preserve some high school memories vaguely. The rest, we can fill in with generic high school experiences based on people of your type. How unique was your time in high school? And how much do you really use? How much do you remember in detail? We can give you generic memories for a lot cheaper, rather than having to tease them out of your brain, and just happen to be synthetic."

To save 2 million bucks for a snazzier replacement body, you go with a loss of accuracy of memory, which can be seen as a loss of humanity – but can also be seen as pretty human because we lose the accuracy of memory over time anyway.

But people, and what comes after people – which will still be people, but will be different in a lot of ways from us, will face choices, not that exact choice maybe, about what they want to do with their consciousness. How much they want to preserve and for how long, that means questioning the value of certain things that we would consider part of being human.

## Ask A Genius 90 – Life and Death (5)

Scott Douglas Jacobsen and Rick Rosner

February 15, 2017

*\*Footnotes in & after the interview, & bibliography after the interview.\**

*\*This session edited for clarity and readability.\**

**Scott: We have talked about medicine, technology, the devaluation of people, and the Golden Rule. Other aspects are legal, rites of passage, and so on. By the time people meet the rites of passage by 20-35, they're done (Alexander & Norbeck, 2009). Our average ages at death can range from about 50-90 dependent on the country (WHO, 2016; CIA, 2016; The World Bank, 2016; OECD, 2016).**

Rick: One reason the rites of passage are done early on are because early on is when we have the most power to acquire comfortable positions in society. A comfortable position might be getting the best reproductive partner, the best spouse. Your powers of doing that are strongest in your 20s and 30s, when you're most reproductively fit.

Then you trade youth, or reproductive fitness, for wealth, ideally, and wisdom, ideally. So, you can still be quite valuable or still can have some reproductive leverage or spouse-getting leverage into your 40s and 50s. After that, unless you're in a special position, you lose that power. You lose value as an employee. The watershed moments in peoples' lives are associated with their years of greatest power.

**Scott: Also, we have been talking about the frontier. The Europeans first discovering for themselves the West, excluding the Vikings, for instance (Hoffman et al, 2016; Pringle, 2012). As an analogy, this technical landscape as we move into the future will be that. There's going to be Luddites (Conniff, 2011; Encyclopædia Britannica, 2004). There's going to be Luddites, not only technically but, medically, who will be found in pockets of the world doing what humans have always been doing.**

Rick: Yes. People like to pick one person from history and say, "That person was the last person in history to understand all human knowledge."

**Scott: Goethe?**

Rick: I'm thinking Goethe, yea. In the sense that none of us are Goethe, and it's 200 years after him, we all are to some extent Luddites. None of us or some small fraction of 1% of us really try to stay abreast of the complete technical frontier.

Only the very earliest and most avid of adapters are fully non-Luddite. Everybody else is making compromises that fall short of full appreciation of and embrace of technology. We can't be bothered.

**Scott: You're talking about two different things at the same time, though. The one side is technical know-how, just knowing things about the world. The other one is actual use of technology.**

**I typically understand Luddite as none use of both of those. So, the Goethe example is only relevant to technical know-how. People, in general, use toilets, use the Internet, use lights. So, most people aren't technology Luddites, but are technical Luddites.**

Rick: If you took a list of the most widely used and the newest and hottest forms of social media, very few people would be a presence on the top 10 of all of those, or the top 20. People already pick and choose the technology, and the level of technology, that they want to embrace. So, while there will be pockets of explicit Luddites, of determined Luddites, there will also be tides of technical embrace. Everybody is going to be muddling along like now, but worse – striking compromises between being hopelessly out of touch and out of date and being sucked into too much tech.

Those reasons can be traditional Luddite reasons or there are a bunch of modern reasons. It is a lot of new tech, which is clunky and doesn't work well – or if it doesn't work well it is a time suck and gets in the way of doing other things that we value.

So, there will be pockets of Luddites, but there will be every little community, family, and individual – each entity – will have its own index of receptivity to technology. Communities will form with like or complimentary indices, with indices that function well with each other.

If you look at a business community like that, you have a community of people with different technical indices with the older higher-ranking people having the lowest technical indices and then younger people, because they're better able or more willing to embrace tech, having higher indices and the highest indices being the IT people whose job it is know this stuff – and who move into these jobs because they like knowing what's going on.

Various indices coming together to form a community, an effective working community. Within families, the old people giving less of a crap about new tech and young people embracing new tech to at least be partially like the old people. So, you can draw a heat map across cities or across people – however you want to group them – that shows different levels of technical embrace.

Somebody who throws a javelin will work different muscles than a marathon runner. So, even people with the same indices of embracing tech will have different tech signatures, it's more than just Luddites is what I'm saying.

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# Ask A Genius 91 – Life and Death (6)

Scott Douglas Jacobsen and Rick Rosner

February 16, 2017

*\*Footnotes in & after the interview, & bibliography after the interview.\**

*\*This session edited for clarity and readability.\**

Rick: The legal aspects of death will change along with all of the controversies to come about whether artificial or augmented or transplanted intelligence has rights. Some social changes happen easily. For instance, interracial couples are now completely acceptable, except among some fringe white supremacist lunatics. That change happened without a lot of political wrangling. It just kind of happened over a period of 10 or 15 years, where interracial couples moved into the media as a brand of coolness. There's a movie out about an interracial couple fighting for the right to marry in the 50s. That whole thing has gone away.

I'm sure if you're an interracial couple that it has, not entirely but, gone away to a significant degree. There might be some micro-aggressions, but it is lesser than some American controversies (University of Minnesota, n.d.; DeAngelis, 2009; University of California, n.d.). One big ongoing American controversy is abortion, which is about the beginning of life rather than the end of life. It remains a completely divisive subject, but a change that has happened with much less controversy is that most people believe that measure of whether or not you're alive is whether or not your brain can still function. About 12 years ago, there was the Terry Schiavo down in Florida controversy.

Where this woman fell into a persistent vegetative state, the husband wanted to pull the plug because it was pointless. She had no chance of recovery. Then religious conservatives including those in the government, e.g. Jeb Bush, took the other side and it turned into a whole years-long legal wrangle. That stood out from a bunch of other situations. Besides exceptional situations like that, you don't get a lot of people arguing that it's anything but your brain that defines whether you can go on living. There may be aspects of life and death connected to future technical capabilities we have to artificially extend the life of the brain.

Some of those issues might be resolved without abortion-level reactions. Others will make people go nuts on either side. We've talked about the ways in which the life of the brain can be extended. You can have add-on technology that rides on inside or outside it. Few people are going to freak out and say, "You're playing God," if there are parts of your body you can replace with either circuitry of bio-circuitry, or specially grown cells. What's the gland that helps determine whether or not you have Parkinson's (Mayo Clinic Staff, 2015a; Parkinson Canada, n.d.; Parkinson's Disease Foundation, 2017)?<sup>3</sup> It's not the pituitary, is it (The Pituitary Foundation, 2017)?

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<sup>3</sup> Parkinson's Disease (2015) states:

*Parkinson's disease is a progressive disorder of the nervous system that affects movement. It develops gradually, sometimes starting with a barely noticeable tremor in just one hand. But while a tremor may be the most well-known sign of Parkinson's disease, the disorder also commonly causes stiffness or slowing of movement.*

**Scott: No, that's for growth hormone (Ibid.). It might be the substantia nigra because it produces dopamine (U.S. National Library of Medicine, 2017; Parkinson Canada, n.d.). The cells of that die relatively fast. Say 40% of them die (or get damaged), you're left with 6/10ths of a substantia nigra, then you start getting Parkinson's. Horrible disease.**

Rick: People like Michael J. Fox have some kind of surgery. Have they put in some kind of pacemaker? Often with Parkinson's, you have trouble with initiating movement. Once you're walking, you're walking, and you're okay. But starting walking can be a struggle.

**Scott: The main problem is mid- to late-stage. You lose the precise ability to move and coordinate motor functions, I think.**

Rick: There's some procedure that they can do that I think puts them in some electronic device that helps with that (National Parkinson Foundation, 2017; Mayo Clinic Staff, 2015b).<sup>4</sup> There's

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*In the early stages of Parkinson's disease, your face may show little or no expression, or your arms may not swing when you walk. Your speech may become soft or slurred. Parkinson's disease symptoms worsen as your condition progresses over time.*

*Although Parkinson's disease can't be cured, medications may markedly improve your symptoms. In occasional cases, your doctor may suggest surgery to regulate certain regions of your brain and improve your symptoms.*

Mayo Clinic Staff. (2015, July 7). Parkinson's Disease. Retrieved from <http://www.mayoclinic.org/diseases-conditions/parkinsons-disease/basics/definition/con-20028488>.

<sup>4</sup> Deep brain stimulation (2015b) states:

*Deep brain stimulation involves implanting electrodes within certain areas of your brain. These electrodes produce electrical impulses that regulate abnormal impulses. Or, the electrical impulses can affect certain cells and chemicals within the brain.*

*The amount of stimulation in deep brain stimulation is controlled by a pacemaker-like device placed under the skin in your upper chest. A wire that travels under your skin connects this device to the electrodes in your brain.*

*Deep brain stimulation is used to treat a number of neurological conditions, such as:*

- *Essential tremor*
- *Parkinson's disease*
- *Dystonia*
- *Epilepsy*
- *Tourette syndrome*
- *Chronic pain*
- *Obsessive compulsive disorder*

*Deep brain stimulation is also being studied as an experimental treatment for major depression, stroke recovery, addiction and dementia. Clinical trials may be available to candidates for deep brain stimulation.*

Mayo Clinic Staff. (2015b, November 11). Deep brain stimulation. Retrieved from <http://www.mayoclinic.org/tests-procedures/deep-brain-stimulation/home/ovc-20156088>.

cochlear implants that replace the hair in your ears with computerized equivalents (National Institute of Deafness and Other Communication Disorders, 2016). That works well. There's crappy ones for your eyes (The Artificial Retina Project, 2013). You can always find some lunatic to object to anything, but nobody is complaining about implants to Parkinson's, deafness, and blindness.

I assume implants, whether organic or not, are not going to make people freak out as more of those things can address problems. Alzheimer's is a global brain dysfunction, but you have things like frontal lobe dementia (Alzheimer's Association, 2017a; Alzheimer's Association, 2017b). Where there might be a local fix that buys you another year or two of decent function by giving a boost to your failing frontal lobe, people with frontal lobe dementia are, some of them, pretty interesting. They lose some functions for inhibition.

There was a guy named Phineas Gage who had the steel rod through his skull (Twomey, 2010). It messed up his frontal lobe. He became a rougher guy. A Jekyll/Hyde deal to a certain extent. It's the same with some aspects of frontal lobe dementia. They found that if you run some current – you don't have to go internal – by earing some helmet deal that facilitates electrical fields that you get amplified brain function. On NPR, there was an autistic lady who had trouble interpreting social cues. She a doctor. She's always pissing people off because she doesn't understand sarcasm or subtlety.

They stimulated her brain for an hour. After that, she could understand social cues. It was like seeing in color after only seeing in black and white. Some of this stuff will naturally pass muster as acceptable medicine and a way to keep functioning, keep living. There will be other aspects of technologically extending function that will freak some people out, especially when you start moving the brain out of its natural enclosure or thought out of its natural enclosure – our skulls – and moving it elsewhere.

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## Ask A Genius 92 – Life and Death (7)

Scott Douglas Jacobsen and Rick Rosner

February 17, 2017

*\*Footnotes in the interview & bibliography after the interview.\**

*\*This session edited for clarity and readability.\**

Rick: The people who might have the greatest intuitive understanding of the legal aspects of this stuff are the people who watch David E. Kelly shows (IMDb, 2017a).<sup>5</sup> *Boston Legal*, which hasn't been on in a few years, or *The Good Wife*, which is not a David E. Kelly show (IMDb, 2017b; IMDb, 2017c). *The Good Wife*, and some of these other shows, have controversial cases of the week with shorter story arcs than the normal long ones. They have new, controversial issues. It is a great way to present the controversies to people. *Law & Order* does that with controversial murder cases (IMDb, 2017d). It is not unreasonable to think that these issues of technically avoided brain death will, in some of their aspects, be played out legally. Again, that underscores that we'll need a mathematical model of consciousness to figure out what is or isn't legitimate brain life, or official brain life.

**Scott: Some super-controversial far future problems will come when culture and legality clash. When we can replicate someone sufficiently completely, digitally, and that person's flesh-body is doing okay, and they're trying to update their will after 20 or 30 years, where they're 110, who writes the will? [Laughing]**

**Who decides - the digital them or the flesh them? By culture, people will default to the flesh person – what you call the “meat brain,” but the digital person is, technically, the same, in a way.**

R: Assuming the technology exists, and it might, people might want to put their meat body on cryonic suspension for 10 years and may only want to exist as a digital entity plus living in portable or rentable bodies as needed. All of this stuff is 80 years away, but not infinitely away. There are some aspects of science fiction that will never come to be. You're fighting too much physics, e.g. time travel. However, there will be plenty of virtual time travel such as a *Westworld*, where you can travel to any time (IMDb, 2017e). It will be possible to simulate possible futures to decide on possible courses of action. Anyway, all of this stuff with regard to mental computation, I think, within the next 80 to 120 years will be sussed out and, more or less,

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<sup>5</sup> David E. Kelly (2017) states:

*David Kelley might be described as living the American Dream, 1990s' style: write a screenplay, move to Hollywood, make millions and marry a movie star. A former Boston lawyer, in the last decade, he switched careers to become a successful television producer whose shows are recognized for their quality as well as receiving top ratings. David Kelley was born in 1956 and is originally from Maine. He attended Princeton University and Boston University Law School. He married actress Michelle Pfeiffer in November 1993. They have two children: Claudia Rose Kelley, born in March 1993, who was adopted by Ms. Pfeiffer eight months before their marriage, and John Henry, born in August 1994.*

IMDb. (2017a). David E. Kelly. Retrieved from <http://www.imdb.com/name/nm0005082/>.

completely solved, which will give the augmented people and post-people a great deal of flexibility in how they want to live their physical and mental lives.

As people become more and more at home with that flexibility, the ways people want to live will be weirder and weirder, where you'll have people wanting to think in tandem. Two people wanting to do a literal marriage of the minds. If you read any science fiction, or think in any science fiction way, all of this becomes something that you can become fairly well-versed in imagining. All of the flavors people might want to be conscious. Ownership of self and other assets will have to be figured out. Religion impinges on it. I am reading a book by Tom Wolfe (Wolfe, 2017; Ritchie, 2016; Collison, 2016; McWhorter, 2016).<sup>6</sup> In the book, it talks about the 19<sup>th</sup> century and evolution (Amazon, 2017; King, 2016). Tom Wolfe has a book talking about the history of the trouble people have with integrating language into theories of evolution (Wolfe, 2016; Coyne, 2016; Poole, 2016). Human language is so great in its sophistication and so different in its abilities from animals that it is hard to come up with a convincing argument for it as an evolved ability (Kirby, 2005). In other words, if you wanted to continue to debunk evolution, language would be one place where you might want to stake your flag, plant your flag.

### **S: Have you heard of the Mysterians or the New Mysterians (Lamb, 2013)?<sup>7</sup>**

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<sup>6</sup> About Tom Wolfe (2017) states:

*Tom Wolfe was born and raised in Richmond, Virginia. He was educated at Washington and Lee (B.A., 1951) and Yale (Ph.D., American Studies, 1957) universities. In December 1956, he took a job as a reporter on the Springfield (Massachusetts) Union. This was the beginning of a ten-year newspaper career, most of it spent as a general assignment reporter. For six months in 1960 he served as The Washington Post's Latin American correspondent and won the Washington Newspaper Guild's foreign news prize for his coverage of Cuba.*

*In 1962 he became a reporter for the New York Herald-Tribune and, in addition, one of the two staff writers (Jimmy Breslin was the other) of New York magazine, which began as the Herald-Tribune's Sunday supplement. While still a daily reporter for the Herald-Tribune, he completed his first book, a collection of articles about the flamboyant Sixties written for New York and Esquire and published in 1965 by Farrar, Straus, and Giroux as The Kandy-Kolored Tangerine-Flake Streamline Baby. The book became a bestseller and established Wolfe as a leading figure in the literary experiments in nonfiction that became known as New Journalism.*

Wolfe, T. (2017). About Tom Wolfe. Retrieved from <http://www.tomwolfe.com/bio.html>.

<sup>7</sup> New Mysterianism and the Riddle of Consciousness (n.d.) states:

*Let's refresh. You have an organic brain, which neuroscientist Christof Koch calls the most complex object in the known universe. That brain manifests what we call the mind. We study the brain. We study the mind. And then we struggle to comprehend the psycho-physical nexus. And this is where we get the mind body problem.*

*Neuroscientists, psychologists, philosophers and theologians all struggle to understand consciousness within their respective disciplines. They work toward an answer, but the New Mysterian philosophers argue we might simply be incapable of solving the riddle.*

*The most prominent of the New Mysterians is Colin McGinn, who recently outlined this philosophy in an excellent panel (watch it here) at the 2013 World Science Festival. The brain itself cannot conceive the natural coexistence of mind and brain. It's not that we're dumb, but we only evolved to carry out certain*



R: No, they sound like a 1960s rock group.

**[Laughing]**

Wait! *Question Mark and the Mysterians* is the name (Question Mark and the Mysterians, n.d.). It was a 1960s rock group.

**S: These folks comprise a set of high-ranking academics with good reputations. Some controversial; some not. They don't take an irreducible lane. It is a mystery. There are problems that are in our purview to understand in some near or far future. There's another class that are essential mysteries. Things that by their nature disallow us to comprehend their true nature. So we cannot come up with adequate explanations for them. In that sense, we come ill-equipped to perceive of things and conceive of things such as language in terms of how they came to be and that that will be some essentialist thing. They are Mysterians. These are absolute mysteries. They will be unknown into the indefinite future.**

R: I disagree with that. Some things may be that, but I disagree language is that. I'm not through the book yet, but I would guess the explosion in the size of our brains and at the same time the development of language (Robson, 2011; Tuttle, 2015). Darwin had these principles like no sophisticated structure can evolve unless it has been propelled along that evolutionary path by utility, e.g. eyes (Desmond, 2016; Natural History Museum, n.d.; Phys.org, 2016).

**S: The immune system (Humphrey & Purdue, 2016).<sup>8</sup>**

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*cognitive feats: navigating a changing world, hunting, surviving within a society, etc. What's the evolutionary advantage of understanding the nature of consciousness?*

*This all involves some of the same concepts as Cognitive Closure: the philosophic idea that humans can only hope to understand certain aspects of universe and simply lack the brains to understand everything.*

*The exception to this, of course, is the steady accumulation and preservation of scientific data over the course of human history. So we kind of cheat a bit with science, this god-of-ideas that stands outside of us.*

*Yet all of this external accumulation can't overcome inner cognitive limits.*

Lamb, B. (2013, July 2). New Mysterianism and the Riddle of Consciousness. Retrieved from <http://www.stufftoblowyourmind.com/blogs/mysterianism-riddle-consciousness.htm>.

<sup>8</sup> The immune system (2016) states:

*Virtually all organisms have at least one form of defense that helps repel disease-causing organisms. Advanced vertebrate animals, a group that includes humans, defend themselves against such microorganisms by means of a complex group of defense responses collectively called the immune system. This protective system evolved from simpler defense mechanisms, but the evolutionary twists and turns that led to its development are not entirely clear. To unravel the path that the vertebrate immune system followed in its evolution, investigators have studied the defense responses of various living organisms. They also have examined the genes of immune system proteins for clues to the genetic origins of immunity.*

Humphrey & Purdue. (2016, October 28). Evolution of the Immune System. Retrieved from <https://www.britannica.com/science/immune-system/Evolution-of-the-immune-system>.



R: They need to be propelled step-wise by showing an advantage at every step of development, or at every significant step. You can have little mutations that prove to be helpful a little later, but you can't have teleology (Encyclopædia Britannica, 2015; Colin, 2009).<sup>9</sup> Where we're going to evolve this stuff because once we get to the end-stage, it will be really helpful.

**S: This is in the popular media, too, by the way.**

R: How so?

**S: People who don't have the background or the training, but have an interest. So I don't know how much they've read on it. People like Ridley Scott (IMDb, 2017f). He seems to be**

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<sup>9</sup> *Teleological Notions in Biology* (2009) states:

*Teleological terms such as "function" and "design" appear frequently in the biological sciences. Examples of teleological claims include:*

- *A (biological) function of stotting by antelopes is to communicate to predators that they have been detected.*
- *Eagles' wings are (naturally) designed for soaring.*

*Teleological notions were commonly associated with the pre-Darwinian view that the biological realm provides evidence of conscious design by a supernatural creator. Even after creationist viewpoints were rejected by most biologists there remained various grounds for concern about the role of teleology in biology, including whether such terms are:*

1. *vitalistic (positing some special "life-force");*
2. *requiring backwards causation (because future outcomes explain present traits);*
3. *incompatible with mechanistic explanation (because of 1 and 2);*
4. *mentalistic (attributing the action of mind where there is none);*
5. *empirically untestable (for all the above reasons).*

*Opinions divide over whether Darwin's theory of evolution provides a means of eliminating teleology from biology, or whether it provides a naturalistic account of the role of teleological notions in the science.*

Teleological Notions in Biology. (2009). Teleological Notions in Biology. Retrieved from <https://plato.stanford.edu/archives/win2009/entries/teleology-biology/>.

taking a teleological view within religious context (Roach, 2017; O'Connell, 2012).<sup>10,11</sup> He seems to be taking that stance with recent movies like *Prometheus* and *Alien: Covenant*

<sup>10</sup> Interview: Ridley Scott on revisiting the Alien franchise with *Prometheus* and *Alien: Covenant* (2017) states:

*Scott wanted to go back and really explore the origins of the xenomorphs, adding that, "We did **Prometheus** – that heaved it off the ground, and **Covenant** is a follow-through to **Prometheus**. We now know who created this, and why, and the next one's a joining up of the storyline." Scott told us that the story of **Alien: Covenant** "touches on mortality, immortality and the real question of who created us and why."*

*Scott then went on to reveal that both **Prometheus** and **Covenant** are inspired by his personal beliefs about where we came from: "We're not just a random biological accident, For you and I to be sitting here right now [by accident] would take trillions of correct decisions made randomly by nature, which of course is ridiculous. I think there's some kind of decision being made. I believe in a higher force – if we want to call it God, then it's God."*

Roach, T. (2017, January 3). Interview: Ridley Scott on revisiting the Alien franchise with *Prometheus* and *Alien: Covenant*. Retrieved from <https://www.flickeringmyth.com/2017/01/interview-ridley-scott-on-expanding-the-alien-franchise-with-prometheus-and-alien-covenant/>.

<sup>11</sup> INTERVIEW: SIR RIDLEY SCOTT EXPLAINS 'PROMETHEUS,' EXPLORES OUR PAST, AND TEASES FUTURE 'ALIEN' STORIES (2012) states:

*RS: Well, from the very beginning, I was working from a premise that lent itself to a sequel. I really don't want to meet God in the first one. I want to leave it open to [Noomi Rapace's character, Dr. Elizabeth Shaw] saying, "I don't want to go back to where I came from. I want to go where they came from."*

**Fandango: So that was always going to be the natural ending for this film?**

*RS: Totally. And because they're such aggressive f\*\*kers ... and who wouldn't describe them that way, considering their brilliance in making dreadful devices and weapons that would make our chemical warfare look ridiculous? So I always had it in there that the God-like creature that you will see actually is not so nice, and is certainly not God. As she says, "This is not what I thought it was going to be, and I think we should get the Hell out of here or there won't be any place to go back to."*

**...Fandango: We're not going to get a slow build in this second film, then. These guys are volatile from the start?**

*RS: In a funny kind of way, if you look at the Engineers, they're tall and elegant ... they are dark angels. If you look at [John Milton's] *Paradise Lost*, the guys who have the best time in the story are the dark angels, not God. He goes to all the best nightclubs, he's better looking, and he gets all of the birds. [Laughs]*

**Fandango: So Milton was one of your influences for the Engineers?**

*RS: That's sounds incredibly pretentiously intellectual. But in a funny sort of way, yes. I started off with a title called *Paradise*. Either rightly or wrongly, we thought that was telling the audience too much. But then with *Prometheus* – which I thought was bloody well intellectual – that wasn't my idea. It was Fox's notion, It came from Tom Rothman, who's a smart fellow. The more I thought about it, the more I thought it was a good idea. This is about someone who dares and is horribly punished. And besides, do you know something? A little bit of an education at the cinema isn't such a bad thing.*

**Fandango: Do you worry that you've lost the element of surprise that worked to your advantage with the original *Alien*? By now, we've seen numerous movies in the *Alien* universe, and like it or not, audiences are coming in with an expectation that deflates tension and suspense. Did you feel the need to pull the audience in to the story in a different fashion this time?**

**(IMDb, 2017g; IMDb, 2017h). I should clarify. Mysterianism or New Mysterianism in general, as far as I know, is about general mysteries, but has been more often associated with the hard problem of consciousness. It just can't be resolved by us.**

*RS: I was hoping I had with the fact that you have a sequence at the beginning of the film that is fundamentally creation. It's a donation, in the sense that the weight and the construction of the DNA of those aliens is way beyond what we can possibly imagine ...*

**Fandango: That is our planet, right?**

*RS: No, it doesn't have to be. That could be anywhere. That could be a planet anywhere. All he's doing is acting as a gardener in space. And the plant life, in fact, is the disintegration of himself.*

*If you parallel that idea with other sacrificial elements in history – which are clearly illustrated with the Mayans and the Incas – he would live for one year as a prince, and at the end of that year, he would be taken and donated to the gods in hopes of improving what might happen next year, be it with crops or weather, etcetera.*

*I always think about how often we attribute what has happened to either our invention or memory. A lot of ideas evolve from past histories, but when you look so far back, you wonder, Really? Is there really a connection there?"*

*Then when I jump back, and you put yourself in a situation of a cave painting, you see that someone 32,000 years ago is showing me a little man sitting in the darkness, using a candle light that is fat from a creature he killed and ate. And in the darkness are two or three other family members whose body heat is warming the cave. But he has discovered that from a piece of this black, burnt stick, he has discovered that he can draw pictures on the wall.*

*In essence, you have the first level of emotion and a demonstration of entertainment, right? Because he's drawing brilliantly on the God damn wall. Now, you put yourself into that context, it's 100-times bigger than Edison. And people don't go back to the basics and ask, "Holy shit, what gave him that knowledge, that jolt to not scribble on the wall but draw on it brilliantly?"*

*If you go back and look, a completely underrated film is Quest for Fire. That was one of the most genius, simplistic but incredibly sophisticated notion of what it was. The evolution of that was just fantastic. And that got me sitting back on my ass thinking, "Damn! What a fundamentally massive idea."*

**Fandango: You throw religion and spirituality into the equation for Prometheus, though, and it almost acts as a hand grenade. We had heard it was scripted that the Engineers were targeting our planet for destruction because we had crucified one of their representatives, and that Jesus Christ might have been an alien. Was that ever considered?**

*RS: We definitely did, and then we thought it was a little too on the nose. But if you look at it as an "our children are misbehaving down there" scenario, there are moments where it looks like we've gone out of control, running around with armor and skirts, which of course would be the Roman Empire. And they were given a long run. A thousand years before their disintegration actually started to happen. And you can say, "Let's send down one more of our emissaries to see if he can stop it. Guess what? They crucified him."*

O'Connell, S. (2012, June 5). INTERVIEW: SIR RIDLEY SCOTT EXPLAINS 'PROMETHEUS,' EXPLORES OUR PAST, AND TEASES FUTURE 'ALIEN' STORIES. Retrieved from <http://www.fandango.com/movie-news/interview-sir-ridley-scott-explains-prometheus-explores-our-past-and-teases-future-alien-stories-716238>.

R: Well, I disagree. Evolution exerts a force. Evolution tends to take a lot of different paths. Any advantageous path it'll exploit. If there's a way for animals to survive, even if it is a half-assed way for an advantage to be had, organisms will often find it without regard to set principles. There are some general principles, but there are some weird, specific situations that may be perverse with regard to general principles. I would bet that big brain-ism and language – the economics of that – somehow genetically is cheap enough or advantageous enough that the rudiment. People pretty much argue that the size of infant brains reached a limit. Brains in babies can only be so big without killing the mom during childbirth. You can't have a giant head coming out of the vagina. I guess childbirth for humans is more dangerous for humans compared to other animals.

**S: It was the size of the birth canal and flexibility co-evolving with brain size.**

R: That's the limiting factor. I'm sure there are other limiting factors for the size of the mature brain because the brain eats a lot of energy. You can't have a brain that is twice the size in diameter and eight times the volume because you can't eat enough to keep up with it. Plus, you can't keep your head up because of the weight people would be breaking their necks.

**[Laughing]**

I'm sure the benefits of a larger mental arena are so significant that it is relatively cheap just to make bigger and bigger brains up to those hard limits.

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## **Ask A Genius 93 – Life and Death (8)**

**Scott Douglas Jacobsen and Rick Rosner**

**February 18, 2017**

*\*Footnotes in the interview & references after the interview.\**

*\*This session edited for clarity and readability.\**

**Scott: Two things come to mind there – well, three actually. One, all of evolution builds on previous structures and functions. So any prior structure with an implied function will develop its future possible paths, or imply a narrow set of future possible paths, in future organisms that will be its future successful descendants.**

**Rick: Okay, in other words, you're working from a library of available apps.**

**S: Absolutely! I love it when you make things more concrete. Thank you for that. Another one is the rapid increase follows that, I think. Where there must be a specific set of paths, that brain volume increase, interconnectivity, complexity, and just raw brain cell number increase follow a certain path along that (Robson, 2011; Tuttle, 2015; Garrett, 2014; Cairó, 2011; Gilbert et al, 2005; The University of Chicago News Office, 2006; Hawks, n.d.; Smithsonian Institution, 2016; University of Colorado Denver, 2012; McAuliffe, 2011;**



**Hofman, 2014).**<sup>12,13,14</sup> **Once you get that going, it just starts going. Another one that goes along that might be language, and you've talked about this before. You start with grunting,**

<sup>12</sup> *Complexity of Our Brain* (2014) states:

*In the past we took a different attitude to studying the brain. Most of the scientific writing on the brain was focused on establishing the superiority of human intelligence. But there is not one single factor that we can apply to distinguish our brains from those of other animals. We cannot just use size, because some mammals (eg whales) have bigger brains. Perhaps it is the size of the brain in proportion to the body.*

*When we try that by measuring the Encephalization Quotient (EQ) ratio, small birds beat us. Perhaps it is size, EQ and something else. The correct question is to ask what aspects of the world are we, as humans, trying to represent in our brain? And how complex is the brain really?*

*In 2009, the Brazilian scientist Suzana Herculano-Houzel performed a review of what we know about the physical structure of the brain. The adult human male brain has 86 billion neurons--more than any other primate. Each neuron has between 1,000 to 10,000 synapses that result in 125 trillion synapses in the cerebral cortex alone. That is at least 1,000 times the number of stars in our galaxy. Stephen Smith from Stanford University reported that one synapse might contain some 1,000 molecular-scale switches. That is over 125,000 trillion switches in a single human brain.*

Garrett, M.D. (2014, February 25). Complexity of Our Brain. Retrieved from <https://www.psychologytoday.com/blog/iage/201402/complexity-our-brain>.

<sup>13</sup> We can consider the encephalization quotient as well. *Genetic links between brain development and brain evolution* (2005) states:

*EQ is calculated by one of two allometric scaling equations:  $EQ = E/P^{0.28}$  and  $EQ = E/P^{0.59}$ , where E is brain weight and P is body weight. Although exponents of 0.67 (Ref. 1) and 0.75 (Refs. 102,103) have been postulated for mammals, these high values are only suitable for comparisons at broad taxonomic levels and are not appropriate for closely related species<sup>36, 104, 105, 106, 107, 108</sup>. For related species, much lower exponents have been proposed, ranging from 0.28 (Refs. 36,104) to 0.59 (Ref. 105). Given the uncertainty in the exponent and the debate over the relevance of EQ in gauging an animal's brain capacity (see Ref. 109 and accompanying commentaries), two sets of EQ values are presented, one calculated from the lower-bound exponent of 0.28, the other from the upper-bound value of 0.59. a | EQ values for species residing along the primate lineage leading to Homo sapiens.*

Gilbert, S.L., Dobyns, W.B., & Lahn, B.T. (2005, July). Genetic links between brain development and brain evolution. Retrieved from [http://www.nature.com/nrg/journal/v6/n7/fig\\_tab/nrg1634\\_F1.html](http://www.nature.com/nrg/journal/v6/n7/fig_tab/nrg1634_F1.html).

<sup>14</sup> *Bigger Brains: Complex Brains for a Complex World* (2016) states:

***Brain size increases slowly***

*From 6–2 million years ago*

*During this time period, early humans began to walk upright and make simple tools. Brain size increased, but only slightly.*

***Brain and body size increase***

*From 2 million–800,000 years ago*

*During this time period early humans spread around the globe, encountering many new environments on different continents. These challenges, along with an increase in body size, led to an increase in brain size.*

***Brain size increases rapidly***

*From 800,000–200,000 years ago*



**then start developing language, and then that starts developing with cultural aspects like writing (Bryant, 2017).<sup>15</sup>**

R: If you could think about things via tags, which are words, that stand for things and manipulate them in your consciousness and hold them in your consciousness are more compact than having to think about the thing itself. It is probably super-efficient in holding things in consciousness. So that language – I hate slippery slope stuff – offers advantages that are so powerful that it pushes the development to a fairly sophisticated full language. It is like the colonists landing on the East coast of America (Hoffman et al, 2016; Pringle, 2012). Europe is already fairly highly developed. There are a quarter of a billion or a half of a billion people in Europe at the time of the colonists, but the US is fairly sparsely populated (U.S. Department of State, n.d.). It's got all of these resources. Ka-boom! Within a couple hundred years, the colonists have spread across 4.5 or 5 million square miles of undeveloped country and just sloppily cut down forests, throw down railroad tracks, throw up a zillion towns, because it is easy to develop here. I guess brain and language development are similarly a treasure trove of benefits versus costs. When you have all of the pieces in place for this brain explosion to happen, it will happen super-fast evolutionarily to the point where it looks hard to explain.

**S: You talked about religion at the outset of this.**

R: Yea, yea, I got diverted.

**S: I think there's something important there, though, that can tie back in. If someone takes the Mysterian view, and if they're applying it within a traditional religious view such as the Abrahamic ones, and what they deem, conveniently, essential mysteries are proof of a divine hand, are they right or are they wrong?**

R: Back to this book I am reading, I knew Nietzsche said, "God is dead" (Amazon, 2017; Magnus, 2015; Philosophy Index, 2017; Blount, 2016; Wicks, 2016).<sup>16</sup> I didn't know he said it at

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*Human brain size evolved most rapidly during a time of dramatic climate change. Larger, more complex brains enabled early humans of this time period to interact with each other and with their surroundings in new and different ways. As the environment became more unpredictable, bigger brains helped our ancestors survive.*

Smithsonian Institution. (2016, February 6). Bigger Brains: Complex Brains for a Complex World. Retrieved from <http://humanorigins.si.edu/human-characteristics/brains>.

<sup>15</sup> How did language evolve? (2017) states:

*Primates have an advanced system of communication that includes vocalization, hand gestures and body language. But even primates stop short of what man has been able to achieve -- spoken language. Our ability to form a limitless number of thoughts into spoken word is one of the things that separates us from our less evolved cousins. While we know that language first appeared among Homo sapiens somewhere between 30,000 and 100,000 years ago, the secret to how language evolved is still unknown...*

Bryant, C.W. (2017). How did language evolve?. Retrieved from <http://science.howstuffworks.com/life/evolution/language-evolve.htm>.

<sup>16</sup> Friedrich Nietzsche (2015) states:

the same time evolutionary theory hit and was prompted by that. That once you buy the theory of evolution then it is much harder to buy the idea of divine creation, and the theory of evolution was a major part of what some other major author calls disenchantment that happened in the mid-19<sup>th</sup> century because the magic was taken away from everything because there were scientific explanations available. So it is only 150 years later and there are still plenty of people, perhaps most of the people in the world, who still buy religious explanations for certain aspects of existence above technical and scientific explanations. Those beliefs will, for the next couple centuries, continue to tangle with technical changes in how we live and how we fight off death. Divine conceptions of people will generally be conservative. The same way conservatives are marriage is between a man and a woman (Conservapedia, 2016; Blackburn, 2011; Bible Study Tools, 2017).<sup>17</sup> They will argue a human is deserving of the most respect legally and culturally among all creatures, natural or artificial. That's somebody with one brain and one bod.

### **S: What about humanists claiming the same?**

R: Okay. There will be religious arguments. There will non-religious, but traditionalist or conservative, arguments. I can imagine "one brain in one body" in the same way people say, "Marriage is between a man and a woman." That'll have to be fought over in courts and legislatures and by people who are willing to show they are as deserving and dignity as traditional humans, even though they're living in weird social and information-processing relationships.

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*Friedrich Nietzsche, (born October 15, 1844, Röcken, Saxony, Prussia [Germany]—died August 25, 1900, Weimar, Thuringian States), German classical scholar, philosopher, and critic of culture, who became one of the most-influential of all modern thinkers. His attempts to unmask the motives that underlie traditional Western religion, morality, and philosophy deeply affected generations of theologians, philosophers, psychologists, poets, novelists, and playwrights. He thought through the consequences of the triumph of the Enlightenment's secularism, expressed in his observation that "God is dead," in a way that determined the agenda for many of Europe's most-celebrated intellectuals after his death. Although he was an ardent foe of nationalism, anti-Semitism, and power politics, his name was later invoked by fascists to advance the very things he loathed.*

Magnus, B. (2015, August 19). Friedrich Nietzsche. Retrieved from <https://www.britannica.com/biography/Friedrich-Nietzsche>.

<sup>17</sup> Marriage (2016) states:

*Marriage is the divinely ordained covenant between one man and one woman, and is intended to be for life. (Genesis 2:24) This is recognized by the majority of churches. The unity between a man and a woman in marriage is an expression of the spiritual relationship that God desires His creation to realize with Him. The first marriage occurred nearly 6,000 years ago in the Garden of Eden, in the area of the world that we now know as the Middle East. The first couple was Adam and Eve, and the Lord Jesus specified that it was male and female that God joined together in marriage for life. (Matthew 19:4-6)*

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# Ask A Genius 94 – Life and Death (9)

Scott Douglas Jacobsen and Rick Rosner

February 19, 2017

*\*Footnotes in the interview & references after the interview.\**

*\*This session edited for clarity and readability.\**

**Scott: What if these fundamental premises of the arguments we're making about the future are not taken on hand by anyone or are discounted? They can be posed by anyone, but they can be opposed by everyone.**

Rick: There's a tendency of the Golden Rule to win over time (Puka, n.d.; Robinson, 2016; The Christopher Newsletter, 2009). A major trend in history is for more and more people to be granted consideration as fully human. Where white guys, white landowners, the most privileged people granted themselves the most rights, but the trend is for other people to agitate for their rights and to say, "I am the same as you. We have the same bodies and brains. Skin color doesn't matter. Gender doesn't matter. Sexual orientation doesn't matter. We are biologically the same. Even if we weren't, we as thinking beings have the same consciousnesses. Even if they're not, there's some base deal. If you feel, if you process information, you deserve as much consideration as somebody who comes in a more familiar and social status filled package" (Rowen, 2017; Crews, 2007; Independence Hall Association of Philadelphia, 2016). So you have women fighting for rights (Imbornini, 2017; Office of the Historian, n.d.; ACLU, 2017; Eisenborg & Ruthsdotter, 1998; National Women's History Museum, 2007). You have gay people fighting for rights (Infoplease, 2017). You have minority people fighting for rights (Yarbrough, n.d.; Thomson Reuters, 2017). More recently, the neurodiverse fighting for rights (Robison, 2013). As a general rule, it is an extension of the Golden Rule to encompass all forms of humanity, e.g. autistic people (Hiker, n.d.; jeffreylube241, 2007; Singer, 2011; Shea, n.d.; Neuhaus, 1999).<sup>18</sup>

When people talk about neurodiverse people, they talk about the first push with autistic people, which was to see if you could get them to be non-autistic. Now, there's a push among some members, the Aspergery people, of the autistic community to say, "We're okay the way we are. We can do science. We can do all sorts of amazing stuff. Maybe, we're socially awkward, but

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<sup>18</sup> *What is Neurodiversity?* (2014) states:

*Neurodiversity is a concept where neurological differences are to be recognized and respected as any other human variation. These differences can include those labeled with Dyspraxia, Dyslexia, Attention Deficit Hyperactivity Disorder, Dyscalculia, Autistic Spectrum, Tourette Syndrome, and others.*

*For many autistic people, neurodiversity is viewed as a concept and social movement that advocates for viewing autism as a variation of human wiring, rather than a disease. As such, neurodiversity activists reject the idea that autism should be cured, advocating instead for celebrating autistic forms of communication and self-expression, and for promoting support systems that allow autistic people to live as autistic people.*

Syracuse University. (2014). What is Neurodiversity?. Retrieved from <https://neurodiversitysymposium.wordpress.com/what-is-neurodiversity/>.

fuck you! We're socially awkward and at home with the way we are" (ASPEN (asperger Autism SPectrum Education Network, 2017).<sup>19</sup> It is like deaf people. Some deaf people get pissed when people get cochlear implants (Canadian Academy of Audiology, 2017). It is like saying, "F-you," to the deaf lifestyle and the deaf community. I am probably saying this in an insensitive and inappropriate way, but that is the general feeling. People are fighting for the right to be accepted as they are rather than being conformed to some supposed biological norm.

**S: Well, any species will create a norm.**

R: Yes, but this is one more instance of the umbrella of the Golden Rule being extended over more and more types of people, and groups of people, and individuals. Similarly, information wins over time. The more sophisticated means of presenting and absorbing, and processing, information will tend to prevail against any kind of societal prohibitions. We really haven't moved into the era of full-on freaking out over information processing because we haven't had the capability to mess with our information processing abilities until now and into the near and mid-future. Though you can look at different forms of information causing people to freak out and say it's kind of the end of the world, where visual media — where TV, radio, and such, are bemoaned because it means the end of the print media.

**[Laughing]**

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<sup>19</sup> *What is Asperger Syndrome?* (2017) states:

*Each person is different. An individual might have all or only some of the described behaviors to have a diagnosis of AS.*

*These behaviors include the following:*

- *Marked impairment in the use of multiple nonverbal behaviors such as: eye gaze, facial expression, body posture, and gestures to regulate social interaction.*
- *Extreme difficulty in developing age-appropriate peer relationships. (e.g. AS children may be more comfortable with adults than with other children).*
- *Inflexible adherence to routines and perseveration.*
- *Fascination with maps, globes, and routes.*
- *Superior rote memory.*
- *Preoccupation with a particular subject to the exclusion of all others. Amasses many related facts.*
- *Difficulty judging personal space, motor clumsiness.*
- *Sensitivity to the environment, loud noises, clothing and food textures, and odors.*
- *Speech and language skills impaired in the area of semantics, pragmatics, and prosody (volume, intonation, inflection, and rhythm).*
- *Difficulty understanding others' feelings.*
- *Pedantic, formal style of speaking; often called "little professor," verbose.*
- *Extreme difficulty reading and/or interpreting social cues.*
- *Socially and emotionally inappropriate responses.*
- *Literal interpretation of language; difficulty comprehending implied meanings.*
- *Extensive vocabulary. Reading commences at an early age (hyperlexia).*
- *Stereotyped or repetitive motor mannerisms.*
- *Difficulty with "give and take" of conversation.*

ASPEN (asperger Autism SPectrum Education Network. (2017). What Is Asperger Syndrome?. Retrieved from <http://aspennj.org/what-is-asperger-syndrome>.



R: But it doesn't really. People freaking out over different genres. Rap music, people freak out over rap music because of the subject matter, but besides that people are probably, to some extent, also disturbed about the way it's presenting - without realizing what they're freaking out about - information in a ratatat form – super-fast – without melody in some cases or really rudimentary melody and the cadence and the words being the most important thing. But people will call it “thug music” or “not even music,” but, to some extent, rap is a disquieting presentation of more concentrated and varied information being presented musically.

**S: I can see where you're coming from, and I agree with most of it. Two points, one is general biological and the other is a specific instance of proper resistance to that, to neurodiversity and the Golden Rule. To the first point, the biological one, in any species, we get lots of diversity. So we'll have various types of functionality and dysfunctionality, and lack of ability or having ability. The range along the IQ scale as well as having hearing versus not having hearing. Another one, though, in terms of neurodiversity, whether it's Asperger's and other conditions. I think that the Golden Rule implies the capacity for the Golden Rule. If an individual does not have the innate capacity for it, then they will not necessarily be able to have it. Common examples are sociopaths or psychopaths (Weller, 2014; Grohol, 2016; Mallett, 2015). People who don't have empathy (MacLachlan, 2007). That's a reasonable resistance.**

R: You don't see people arguing for psychopaths. There's no psychopath organization arguing that psychopaths belong to the neurodiverse family.

[Laughing]

**S: Right, it's hard for the anti-social to become social, form groups, and advocate.**

R: There was a guy who used to have a radio show called Phil Hendrie, who would have fake guests on (Hendrie, 2017).

[Laughing]

**S: Okay.**

R: People with issues. He had an issues-based talk radio program. He would have guests on. Guests would have a gripe about neighbourhood issues. Over the first half of the show, first 20 minutes of the show, you would find out that the guests' issues turned out to be monstrous. The rest of the show [Laughing] would be people who were fooled by the fake guests calling into the radio show. [Laughing]

[Laughing]

R: It was a fantastic radio program. He's really good. Somebody who represents psychopath rights. That would be a great fake organization. Somebody who says, “We were born this way. We deserve the right to do horrible things in society because that's just the way we are.”



[Laughing]

[Laughing]

R: But yea, the Golden Rule does imply the ability to feel.

**S: Not only feel, but feel what others feel, it is empathy, not just feeling.**

R: To feel something, I would say towards the edge—towards the newest edge, even feeling different ways as long as you have feels those feels should be respected as long as they don't impinge on other people. That includes embracing animals and what they feel, and including some Aspergery people who have feelings for patterns in nature as opposed to human interaction (PETA, 2017; Wise, 2016; Friends of Animals, 2017). Those feelings, because they are felt in the brain with the same power and immediacy as other feelings, deserve the same consideration.

**S: Right, I think of Mandelbrot (Encyclopædia Britannica, 2014). I think of Gould (The Glenn Gould Foundation, 2015). Both people had issues as far as I recall. Mandelbrot, it was patterns in nature. Gould, it was point-counterpoint with Bach (Smith, n.d.). Both could do things few others could. I absolutely agree with you on that point with those two examples that come to mind, who made great contributions.**

R: This is slightly off the deal, but there's this story, on NPR, that's been on a zillion times about the autistic kid who learned how to communicate with people via Disney movies (Suskind, 2014).

**S: Get outta here.**

[Laughing]

R: This kid loses his verbal abilities to a great extent. He is freaking out about the world the way some autistic people do. There's just a lot of sensory information and it bugs them. It's too much. The thing that keeps this kid soothed is sitting this down in front of a bunch of Disney movies. That seems to keep him satisfied, even though he's quiet and divorced from the world. At one point, the kid is 9 or 10 and the brother is celebrating a birthday. The autistic kid who is non-verbal walks into the room and says something crazily sophisticated. [Laughing] I'm mangling the story. But the kid says, 'It's like Peter Pan. You don't want the other son to grow up.' He says this crazily sophisticated thing in the context of a Disney kind of framework and the family finds out. They have Disney time in the basement. The dad impersonates Disney characters and is able to talk to the kid by being Disney characters.

[Laughing]

[Laughing]

R: The kid has an entire model of the world via Disney. The real story is better than I told it and makes more sense.

**S: But there are people like that. Kim Peek was the basis for *Rain Man* (Wisconsin Medical Society, 2017). He had this incredible memory. This incredible associative gift, but he lacked a corpus callosum. But the brain matter that was made of that was present, and I think they did a special on him, and the corpus callosum looked like a hand grenade had blown it up. It was connected from one thing to the other to the other. In a neurodiverse culture, one that accepts that. It could be of great benefit.**

R: For the past 100 years, we've had the nerd stereotype. The dweeby-awkward sciencey guy, and girl. That is probably somewhat rooted in neurodiversity and is more accepted now than in the 60 and 70s. As I've said, being a nerd in the 60s and 70s was brutal, I'm not saying now it is a picnic, but there are more resources available, well for anybody. Nobody is no longer isolated in their school and family anymore as long as they have access to the internet and reasonable ability to search for stuff.

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# Ask A Genius 95 – Life and Death (10)

Scott Douglas Jacobsen and Rick Rosner

February 20, 2017

*\*Footnotes & in-text citations in the interview & references after the interview.\**

*\*This session edited for clarity and readability.\**

Rick: The last time we spoke, I had begun to read a book by Thomas Wolfe called *The Kingdom of Speech* (Wolfe, 2017; Amazon, 2017).<sup>20</sup> It is about the origin of speech in humans and how difficult it is to figure out when and why it originated (King, 2013; University of New England, 2014; Balter, 2015; Morelle, 2013; Lieberman, 2007; Polychroniou & Chomsky, 2016).<sup>21</sup> I said some things that were circular reasoning. I forgot what, or most of it. Before I get to any reasoning or even if I get to any reasoning, I want to set the crime scene. We are trying to figure out how speech originated, but you can't even do that or how humans became—for most of the history of humanity, humans considered themselves separate from the animal kingdom (Choi, 2016; Wolchover, 2011; Hogenboom, 2015; University of Adelaide, 2013; Suddendorf, 2013; Stix, 2014). It is an easy conclusion to reach when you look at how different our lives are from animal lives and how different we are in abilities and physiology. We've got giant brains. We've got speech. We invent stuff. We transformed the world and pretty much taken over the world.

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<sup>20</sup> About Thomas Wolfe (2017) states:

*Tom Wolfe was born and raised in Richmond, Virginia. He was educated at Washington and Lee (B.A., 1951) and Yale (Ph.D., American Studies, 1957) universities. In December 1956, he took a job as a reporter on the Springfield (Massachusetts) Union. This was the beginning of a ten-year newspaper career, most of it spent as a general assignment reporter. For six months in 1960 he served as The Washington Post's Latin American correspondent and won the Washington Newspaper Guild's foreign news prize for his coverage of Cuba.*

*In 1962 he became a reporter for the New York Herald-Tribune and, in addition, one of the two staff writers (Jimmy Breslin was the other) of New York magazine, which began as the Herald-Tribune's Sunday supplement. While still a daily reporter for the Herald-Tribune, he completed his first book, a collection of articles about the flamboyant Sixties written for New York and Esquire and published in 1965 by Farrar, Straus, and Giroux as The Kandy-Kolored Tangerine-Flake Streamline Baby. The book became a bestseller and established Wolfe as a leading figure in the literary experiments in nonfiction that became known as New Journalism.*

Wolfe, T. (2017). About Thomas Wolfe. Retrieved from <http://www.tomwolfe.com/bio.html>.

<sup>21</sup> Human language may have evolved to help our ancestors make tools (2015) states:

*If there's one thing that distinguishes humans from other animals, it's our ability to use language. But when and why did this trait evolve? A new study concludes that the art of conversation may have arisen early in human evolution, because it made it easier for our ancestors to teach each other how to make stone tools—a skill that was crucial for the spectacular success of our lineage.*

*Researchers have **long debated when humans starting talking to each other**. Estimates range wildly, from as late as 50,000 years ago to as early as the beginning of the human genus more than 2 million years ago. But words leave no traces in the archaeological record. So researchers have used **proxy indicators** for symbolic abilities, such as early art or sophisticated toolmaking skills. Yet these indirect approaches have failed to resolve arguments about language origins.*

Balter, M. (2015, January 13). Human language may have evolved to help our ancestors make tools. Retrieved from <http://www.sciencemag.org/news/2015/01/human-language-may-have-evolved-help-our-ancestors-make-tools>.

Before you can talk about how that happened via evolution, we kinda have to set up the pattern of facts to see what you can pull out of it. So fact one as much as I understand it is that humans have been genetically pretty much the same for the past 100,000 years. And for a couple million years before that, there were Neanderthals and a bunch of other near-human types of hominids that also had pretty big brains. I think the Neanderthal brains were even bigger than human brains. So that there were hominids with near-human capabilities. There were humans for 100,000 years. There were near-humans for a couple million years at least before that. We've been around for a long time. Fact two would be that as a species we have become extremely successful in the past, say, 10,000 years, which is as far back as history really reaches. There might be cave paintings that reach back. I don't know. How far back? 30,000, 40,000, years?

**Scott: Places like France, ~30,000 years ago. Other areas like Indonesia, maybe, 35,000 or 40,000 years ago.**

R: We've never discovered animals that do representational painting. That is a mark of human near-civilization, say. It only goes back 20,000 years or so, maybe 30,000 or 40,000. Fact three is we have enormous brains compared to other animals. We have speech. We have the ability for extreme flexibility and ingenuity, and inventiveness and toolmaking. All of that stuff. So, that pretty much sets the scene. And then this book, this Tom Wolfe, *The Kingdom of Speech*, book talks about Noam Chomsky saying there's a speech organ (McGill University, n.d.; McGilvray, 2009).

That somehow there's a specialized organ in the brain, or it's a neighborhood. I haven't read Chomsky enough or at all. Some part of the brain evolved into specialized speech (Barsky, 2016).<sup>3</sup> Then some other people have come along more recently that dispute that, but, in any case, speech remains – accounting for when it originated and how it evolved – a problem. <sup>3</sup> Universal grammar (2016) states: Universal grammar, theory proposing that humans possess innate faculties related to the acquisition of language. The definition of universal grammar has evolved considerably since first it was postulated and, moreover, since the 1940s, when it became a specific object of modern linguistic research. It is associated with work in generative grammar, and it is based on the idea that certain aspects of syntactic structure are universal.

Universal grammar consists of a set of atomic grammatical categories and relations that are the building blocks of the particular grammars of all human languages, over which syntactic structures and constraints on those structures are defined. A universal grammar would suggest that all languages possess the same set of categories and relations and that in order to communicate through language, speakers make infinite use of finite means, an idea that Wilhelm von Humboldt suggested in the 1830s. From this perspective, a grammar must contain a finite system of rules that generates infinitely many deep and surface structures, appropriately related. It must also contain rules that relate these abstract structures to certain representations of sound and meaning—representations that, presumably, are constituted of elements that belong to universal phonetics and universal semantics, respectively. Barsky, R.F. (2016, September 6).

The deal is that we been really successful. Humans have been really successful beginning 10,000 years ago. The human population really started increasing steadily from world population of a few thousand to like a quarter billion at the time of Christ to half a of a billion in the late Middle



Ages and early Renaissance to 7.3 billion people now (Annenberg Foundation, 2016; World Population History, 2016). For most of the history of humans on earth, we were successful enough to survive, but we weren't that wildly successful compared to the last 10,000 years. So, you have to ask, "What were humans doing for the first 80% or 90% of their history on Earth?" Once you hit a certain level of civilization, it looks like things start going really fast. We went from no civilization to the first vestiges or the first traces of civilization going from hunting and gathering to farming 10,000 years ago. And then for the past 10,000 years, it's been a steady almost inevitable-looking increase in technical ability and in human population.

Yet, we were successful enough to survive as a species for 80,000 or 90,000 years before that. And millions of years before that if you count closely related hominids as almost human enough to be humans, so I speculate that we were successful enough to survive for hundreds of thousands of years. But not so super successful because we were living like fancy apes. I would guess that humans with their super big brains used their brains as their predecessors did, but just better and more cleverly. But still having more or less the same behaviors and life strategies as apes, really clever ones; better hunters, better gatherers, maybe better at finding shelter, maybe starting to use tools, but using them for the same stuff apes did for hunting, we were super successful apes.

It took many tens of thousands of years for culture to start building up to the point where our lifestyles could sufficiently diverge from ape lifestyles and towards early human lifestyles that we eventually, 10,000 years ago, got on this accelerated ramp up to technical proficiency we have now. So, it was a slow build-up of skills until those skills, and the flexibility in behaviour, all sufficiently reinforced themselves that entirely new ways of life could be lived by the humans of 20,000 to 10,000 years ago, including language.

This book I just read discusses whether language is an artifact, which is something manufactured by humans like stone tools or bows and arrows rather than something that is innate to us because we evolved. Anyway, to go back to scene setting, we evolved big brains, didn't build them. Probably, we evolved big brains in the context of still living like apes. By the time we began living like humans, our brains were already set at our current large size. So, the big brains came first and the human lifestyle came later, and there must've been – even for living as apes – evolutionary advantages sufficient to build the brains big. Brains came first and let us live successfully as apes.

Then as we built up culture, eventually, it let us diverge from ape behaviour, which doesn't answer the question posed in this book whether language ability is an evolved trait that can be found within specific structures in the brain or whether language is a cultural artifact that takes advantage of the brain's in-built flexibility. I can't answer that question, but I can propose a question which reflects on that. Which is, we can assume our brain size and brain flexibility – the way our brains continuously rewire themselves via sending out a zillion dendrites found more and more ways to do things depending on patterns in the flow of thought and information – came from pressure of living as apes (Spencer, 2013). The question is "would there be any evolutionary pressure to acquire specific language capabilities?"



In other words, would being good at language provide enough of an evolutionary advantage that it's likely that specific language abilities are hardwired into our brains or does our ability to have language rest entirely on – or close to entirely – the evolutionary advantages provided by general increases in brain size and flexibility? I think that's where the main—we can look at brain structure and try to find specific language facilitating structures. But short of doing that, the central question of whether language is an evolved ability or a cultural artifact rests on that question. Whether language facility had its own evolutionary momentum separate from the momentum provided by increases in brain size and flexibility.

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# Ask A Genius 96 – Life and Death (11)

Scott Douglas Jacobsen and Rick Rosner

February 21, 2017

*\*Footnotes & in-text citations in the interview & references after the interview.\**

*\*This session edited for clarity and readability.\**

Rick: This book I am reading I great, and only 170 pages or so, because 1) he's a great writer and b) you want to read a book by him and that's not 800 pages (Amazon, 2017). It's got a lot of great gossip and dissing of Darwin (Desmond, 2016).<sup>22</sup> It's got a whole big chapter of how Darwin kind of stole credit for the theory of evolution from Wallace because Darwin was a gentleman and belonged to the upper class of England. He was able to steal credit away from Wallace (Camerini, 2007; Wyhe, 2013; Thornhill, 2012; Coyne, 2011; Garner, 2016; Kirsch, 2016; Siegfried, 2016).<sup>23</sup> They each independently developed theories of evolution, but Wallace tried to turn his in first. But Darwin was able to slide his in beside it so that he got credit as co-discoverer, but we call it Darwinism (Lennox, 2015). Wolfe talks about how England's social structure facilitated that whole sleight of hand that lead to Darwin getting more credit. Also, he's kind of mean to Noam Chomsky (McGilvray, 2009). It is fun to read. It is interesting because it is arguing about language as a cultural artifact and, at the same time, is telling these kind of gossip stories about how people who are trying to decide how their own theories and stuff rose to prominence.

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<sup>22</sup> Charles Darwin (2016) states:

*Charles Darwin, in full Charles Robert Darwin (born February 12, 1809, Shrewsbury, Shropshire, England—died April 19, 1882, Downe, Kent), English naturalist whose scientific theory of evolution by natural selection became the foundation of modern evolutionary studies. An affable country gentleman, Darwin at first shocked religious Victorian society by suggesting that animals and humans shared a common ancestry. However, his nonreligious biology appealed to the rising class of professional scientists, and by the time of his death evolutionary imagery had spread through all of science, literature, and politics. Darwin, himself an agnostic, was accorded the ultimate British accolade of burial in Westminster Abbey, London.*

Desmond, A.J. (2016, June 10). Charles Darwin. Retrieved from <https://www.britannica.com/biography/Charles-Darwin>.

<sup>23</sup> Alfred Russel Wallace (2007) states:

*Alfred Russel Wallace, byname A.R. Wallace (born Jan. 8, 1823, Usk, Monmouthshire, Wales—died Nov. 7, 1913, Broadstone, Dorset, Eng.), British humanist, naturalist, geographer, and social critic. He became a public figure in England during the second half of the 19th century, known for his courageous views on scientific, social, and spiritualist subjects. His formulation of the theory of evolution by natural selection, which predated Charles Darwin's published contributions, is his most outstanding legacy, but it was just one of many controversial issues he studied and wrote about during his lifetime. Wallace's wide-ranging interests—from socialism to spiritualism, from island biogeography to life on Mars, from evolution to land nationalization—stemmed from his profound concern with the moral, social, and political values of human life.*

Camerini, J.R. (2007, November 13). Alfred Russel Wallace. Retrieved from <https://www.britannica.com/biography/Alfred-Russel-Wallace>.

Darwin rode into prominence on a cultural tide. Chomsky rode to prominence on kind of a similar forceful personality and cult of personality, and academic gamesmanship, whether it was intentional or not. And then there's a guy that tries to take down Chomsky based on his experience (McCrum, 2012). He goes to live as an evangelist with his evangelist wife in the Brazilian rainforest. He tries to be an evangelist to the people with the least developed language structure on Earth. They only have present tense. They have no idea of numbers. The guy spends 30 years in dire circumstances, in the most horrible circumstances, and comes back with evidence that there's no evolutionary basis for language based on what he discovered among these people who barely had language or civilization, and were perhaps living the way that humans lived on the cusp between zero civilization and the very beginnings of it.

They don't have permanent structures. They throw up a bunch of palm fronds and leaves, and when the wind comes and tears up their temporary structures they build another one. It makes me think about an aspect of evolution that I take for granted—two aspects. Humans evolved from other primates and that language is an evolved characteristic, but I had never been forced to examine the—it is a huge leap! And we've grown up under it. Evolution is 150 years old, but it wasn't at all apparent to the first popularizers of evolution, Darwin (Than, 2015). Darwin was very cautious about suggesting humans evolved from other primates, and we're so different from other primates that we take it for granted. Most technically minded, technologically minded, people, most people who believe in evolution, don't take it as a whole separate question as to whether humans evolved from other animals. It's part of our contemporary package, but it wasn't at the very beginnings of the theory.

At least, it was something that took more arguing to make the case for because of religious and cultural factors, on the one hand, and that we're so different in the way we live than other animals and the way we're built. I've never thought of language as it being an evolved thing. This book sets out a convincing case that language, while it's the basis for civilization, makes so many things easier. It is hard to imagine civilization without it. It is the linchpin of civilization. It might involve having evolved structures to facilitate language. That language may just ride along with the brain's general ability, the human brain's general ability, to be flexible and efficiently process information, which is a lot for a tiny little book. 170 pages and only 300 words per page. It's only 50,000 words. A kind of a fun book.

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## Ask A Genius 97 – Life and Death (12)

Scott Douglas Jacobsen and Rick Rosner

February 22, 2017

**Scott:** As a systems and institutional analysis, and in my experience in the academic system, and I know it pretty well, if you look at the way that the professorial system is set up and some research by Jonathan Haidt and others, the ratio of liberal-to-conservative thinkers in the departments are 12-to-1 to 18-to-1 (Richardson, 2016; Thorne, 2011; Gross, 2016; Letzter, 2016; Abrams, 2016; Kristof, 2016; Konnikova, 2014; Kay, 2016; Leo, 2016; Smith, 2012; Bunch 2016; Honeycutt, 2016; Chen, 2015; Haidt, 2014; MacDonald, 2015; Smith, 2016; Bouck, 2015). It's cozy with lifetime jobs for the most part (National Education Association, 2015; Enders, 2015; Ginsberg, 2012). You have tenure (Yamada, 2011).<sup>24</sup> You are around people that believe the same things as you. So in two ways, it's very good. One, you are around people who believe the same things as you. So it becomes akin to seminary, where there might be the occasional Baptist where the rest of the attendees are some form of Catholic or Protestant, or some major branch of Christianity (The Association of Theological Schools, 2017). The second one is if students are going to be coming to you to do an honors project for undergraduate, or bachelor, degrees, or to do a master's or doctoral thesis with you, then they will have juicier bait if they kowtow and pick a topic that is more aligned with something you're more interested in and something that you're going to be more interested in is going to be politically to the Left (Carleton University,

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<sup>24</sup> What is Academic Tenure? (2011) states:

*Tenure is pretty much unique to educational settings. Attaining tenured status as a professor usually means two things:*

*First, it conveys an enhanced level of protection for academic freedom, grounded in the conviction that knowledge creation and expression of ideas should be free from intimidation or retaliation.*

*Second, it provides significantly elevated levels of job security. Generally speaking, tenured professors can be dismissed only for failure to perform essential job responsibilities, serious misconduct, or severe economic necessity. In the United States, only unionized employees with strong collective bargaining agreements enjoy similar job protections.*

*Tenure is conferred by a single institution; thus, it is not automatically transferable. A tenured professor who wants to move elsewhere typically must negotiate with another institution to be appointed with tenure, or perhaps do what's called a "look see" year as a visiting professor to determine whether a lateral hiring with tenure is a good match.*

*Ideally, the transition to tenured status transforms the employment relationship from one of contract to that of covenant. In other words, tenure should create a special bond, a mutual investment, between the institution and the professor. Umm, it doesn't always work that way, as the academic workplace can be as full of ups and downs as any other. Nevertheless, most tenured professors take their responsibilities seriously and appreciate the benefits conferred by this status.*

Yamada, D. (2011, August 22). What is Academic Tenure?. Retrieved from <https://newworkplace.wordpress.com/2011/08/22/what-is-academic-tenure/>.



2017; The University of British Columbia, 2017).<sup>25,26</sup> I'm not saying better or worse, necessarily, but I am saying bias – as this is a systems and institutional analysis (Rothman

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<sup>25</sup> *Honours Thesis vs. Honours Project* (2017) states:

***What are the differences between the Project and the Thesis?***

***Honours Thesis***

*The Thesis involves conducting research under the direct supervision of a faculty member. It typically involves:*

- *literature review*
- *data collection and analysis*
- *preparation of a substantial document...*

***Honours Project***

*The Project is a regularly scheduled class (1.0 credit) during which students participate in a variety of active learning exercises.*

*Students will work closely with each other via writing groups, peer-editing exercises, and other elements consistent with a supportive writing community in order to enhance their:*

- *writing*
- *critical reading*
- *presentation skills.*

Carleton University. (2017). *Honours Thesis vs. Honours Project*. Retrieved from <https://carleton.ca/psychology/undergraduate/current-students/thesis-vs-project/>.

<sup>26</sup> *The Graduate Thesis* (2017) states:

*Your thesis will be the final product of your time in graduate school. You should be planning your thesis from the very beginning of your degree program.*

*A thesis is a substantial piece of scholarly writing that reflects the writer's ability to:*

- *conduct research*
- *communicate the research*
- *critically analyze the literature*
- *present a detailed methodology and accurate results*
- *verify knowledge claims and sources meticulously*
- *link the topic of the thesis with the broader field*

*A thesis at the doctoral level is called a dissertation, but dissertations and theses are usually referred to collectively as theses. There are some differences between a master's and a doctoral thesis:*

- *A master's thesis must demonstrate that the student knows the background and principal works of the research area, and can produce significant scholarly work. It should contain some original contribution whenever possible.*
- *A doctoral thesis must contain a substantial contribution of new knowledge to the field of study. It presents the results and an analysis of original research, and should be significant enough to be published.*

et al, 2005; Tobin, & Weinberg, 2006; Hudson, 2010; McArdle, 2017; Chisholm-Burns, 2016; Riley, 2014; Gobry, 2014). So there's very much something to what you're saying about the British 'posh' system that Darwin and Wallace had there in terms of who gets a say in what and who gets to claim ownership (Desmond, 2016; Camerini, 2007).<sup>27,28</sup>

Rick: It's also the deal with Everett (Everett, 2015). He was an evangelist. He didn't start as an evangelist. He started as a white trash street kid, who was kind of—he met a hot young woman who was an evangelist, married her, and became one himself. The deal is that if you want to evangelize part of the world that doesn't speak English then you have to at least make an attempt to learn their language. Anyway—so, he had a white trash, trailer trash, background and then a weirdly religious background. So he didn't have great academic credentials. The situation recreated itself. There's a whole other factor of the clustering of beliefs. If all of the best people are on one side, or have been recruited to one point of view, then they're going to have better arguments and it will make it easier for them to recruit more good people. In the Middle Ages, there were a lot of good arguments—all of the best people were in the religion business. They were either religious people or their work were sponsored by religious communities. So there were a lot of persuasive arguments for religion. Now, all of the most persuasive arguments are made by science.

It's not to say the religion and science are equally true. One reason the best arguments are made by science is because science reflects external reality. It certainly doesn't help religious

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The University of British Columbia. (2017). The Graduate Thesis. Retrieved from <https://www.grad.ubc.ca/handbook-graduate-supervision/graduate-thesis>.

<sup>27</sup> Charles Darwin (2016) states:

*Charles Darwin, in full Charles Robert Darwin (born February 12, 1809, Shrewsbury, Shropshire, England—died April 19, 1882, Downe, Kent), English naturalist whose scientific theory of evolution by natural selection became the foundation of modern evolutionary studies. An affable country gentleman, Darwin at first shocked religious Victorian society by suggesting that animals and humans shared a common ancestry. However, his nonreligious biology appealed to the rising class of professional scientists, and by the time of his death evolutionary imagery had spread through all of science, literature, and politics. Darwin, himself an agnostic, was accorded the ultimate British accolade of burial in Westminster Abbey, London.*

Desmond, A.J. (2016, June 10). Charles Darwin. Retrieved from <https://www.britannica.com/biography/CharlesDarwin>.

<sup>28</sup> Alfred Russel Wallace (2007) states:

*Alfred Russel Wallace, byname A.R. Wallace (born Jan. 8, 1823, Usk, Monmouthshire, Wales—died Nov. 7, 1913, Broadstone, Dorset, Eng.), British humanist, naturalist, geographer, and social critic. He became a public figure in England during the second half of the 19th century, known for his courageous views on scientific, social, and spiritualist subjects. His formulation of the theory of evolution by natural selection, which predated Charles Darwin's published contributions, is his most outstanding legacy, but it was just one of many controversial issues he studied and wrote about during his lifetime. Wallace's wide-ranging interests—from socialism to spiritualism, from island biogeography to life on Mars, from evolution to land nationalization—stemmed from his profound concern with the moral, social, and political values of human life.*

Camerini, J.R. (2007, November 13). Alfred Russel Wallace. Retrieved from <https://www.britannica.com/biography/Alfred-Russel-Wallace>.

arguments that most of the smartest people are going to be more attracted to science than religion. In this country, we've fallen into the deal where Republicans were encouraged, have been encouraged, to pander to dumb people for about 30 years or more, since before Reagan, because dumb people are more manipulable. This has led to people who don't like dumb arguments being more attracted to non-Republicans and systems. You have more smart people on the Democrat side than the Republican side, which leads to better arguments made by the Democrats and dumber arguments made by the Republicans. It leads to this situation we have now. Where it has pissed off smart people on the Liberal side and pissed off people on the Republican side, with the relatively few smart conservatives, their voices are lost in piles and piles dumbshittery. It is not a good situation.

**S: This goes back to the similar phenomenon in the Wolfe and Chomsky case (Kirsch, 2016; Siegfried, 2016).**

R: Yeah—well, yes and no. Orthodoxy does serve a purpose besides maintaining the status quo. There are non-cultural reasons. There empirical reasons why some orthodoxies dominate. For instance, believing in both flavors of Einstein's Relativity is an orthodoxy, believing in Quantum Mechanics is an orthodoxy, before that, 120 years ago, believing in Newtonian Mechanics as the pinnacle of physics was the orthodoxy and it wasn't because of the cozy clubs of physicists (Moring, 2001). It was because these orthodoxies were supported by a bunch of scientific success. Theories that turned out to be closely matched to the real world. And the lack of theories that weren't as good at that point than the existing orthodox theories. Orthodoxies tend to be too hide-bound and a little too resistant to new theories. At the same time, they do keep out a lot of crap theories. There are obvious pluses and minuses to the natural orthodoxies that form, which is all laid out pretty much in Kuhn structure of scientific revolution (Kuhn, 1970)?

**S: That's correct.**

R: Which itself has been kind of—that thing is old now. It itself used to be revolutionary. Now, it has been subject to revised analysis. Anyway. You hear a saying in Liberal circles a lot lately that “reality has a Liberal bias.” That anytime the dumb Right runs into facts it doesn't like. Now, they yell, “Fake news!” That's phenomenon is only about 6 months old. I am hoping that it goes away, personally. That's it.

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# Ask A Genius 98 – Life and Death (13)

Scott Douglas Jacobsen and Rick Rosner

February 23, 2017

[Beginning of recorded material]

Rick Rosner: We've been talking about death. We've been talking about evolution (Moran, 2006).<sup>29</sup> 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.

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).<sup>30</sup> But there is an evolutionary force in people not living for a century. But

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<sup>29</sup> *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](http://bioinfo.med.utoronto.ca/Evolution_by_Accident/What_Is_Evolution.html).

<sup>30</sup> *What Is Aging?* (2013) states:



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.).

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?

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*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](http://www.senescence.info/aging_definition.html).



**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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# Ask A Genius 99 – Life and Death (14)

Scott Douglas Jacobsen and Rick Rosner

February 24, 2017

[Beginning of recorded material]

**Scott Jacobsen: Society has many taboos around sex and sexual conduct, especially for the young and women (Sonny, 2012). These can be religiously based traditionally, but even in larger secular culture they develop their own strange mores (Ibid.). Let's talk about that a bit.**

Rick Rosner: Before we get to that, we have to talk about how as civilized beings we have large investments in denying the grossness of our bodily functions. For most of civilized human history, for most of the past 1,000 years, we've considered ourselves more exalted than animals and have tried to sequester our biological functions away from polite consideration and discourse.

Anything to do with our genital areas is awkward to talk about in public. The grossest thing we do in public is probably eat and we have a weird separation of focus between how good tastes and what is actually happening in our mouths. It is being mushed and mixed with spit and eventually turned to shit. 60 years ago, Philip K. Dick wrote a book called *Counter-Clock World* (Encyclopædia Britannica, 2016). It is like an entire *Benjamin Button* world.

Dead old people come alive, dig themselves out of their graves, and then age in reverse, and people go to the grocery store and buy different flavors of shit all wrapped up and then they jam it up their asses, and then 24 hours later it comes out of their mouths as food, which is taboo for people to let other people unchew the food and it turning into the food products. Those are wrapped up and disposed of.

The whole process from beginning to end is grossly biological. We have tried to avoid addressing it for most of our history with things changing only in the last—there have always been people who have violated the taboos by talking about gross stuff, but only in the past, in the TV era, say, the recent TV era. All biological functions have become fair game for jokes and discussion, which is—the whole thing is—we live in a lot of forms of denial, and our denial of the gross biological nature of our daily lives is one of the biggest areas.

We think of ourselves as civilized, thinking, talking, creating beings. Yet we probably spend more of our time doing mandatory biological functions than we do doing the functions that we think make us human. Sleeping isn't gross, but it is a mandatory biological function, that takes up at least a mandatory 25% of our lives. That's 25% there. Then there's everything else that we do.

Eating doesn't take up that much time. Anyway, we—

**S: Another bodily function is sex and birth.**

R: Sex is the most perverse bodily function. For every other bodily function, our evolutionary imperative lines up with our individual imperative. By that I mean, every other bodily function we do is directly or indirectly related to continuing to live. We breathe to live. We eat to live. We drink to live. We pee and poop to live. They're either things that we have no choice about doing—peeing, pooping, sleeping—or they are things where we have a choice but they are done in the pursuit of continued life.

Because we're evolved creatures who have evolved to want to keep living in order to reproduce and create the next generations. So evolutionary forces have made us want to do 2 things: keep living and reproduce. And reproduction goes against the principles of wanting to keep living. In that, reproduction diverts resources from the individual that the individual could use for a better life, say. You're creating entire other people, who are going to drain your resources and put you at risk. And who will eventually make you obsolete.

**S: From the gene view, it is an absolute necessity (RationalWiki, 2015). From the individual organism view, it can be wasteful. Is that what you're saying?**

R: Yea, yea. We're imperfectly designed. We're not designed. We evolved. But the characteristics we evolved contain unavoidable contradictions. We want to keep living, but we have to make copies of ourselves through sex – which goes against our evolved drive to keep living. I would assume that's an unavoidable consequence.

Wherever life has evolved, I would assume there's that kind of contradiction because—we've talked about this a bit—evolution doesn't particularly care, care about anything. It is a force. But it is a force that doesn't place any premium...

[Break in the recording]

R: Anyway, There's little evolutionary force behind us not getting our feelings hurt because we're eventually all going to die.

**S: Also, our emotions in reaction to the environment—environment broadly construed – kin, resources, and predators—are akin to bodily functions. Although, the emotions are a product of bodily, mental, functions.**

R: Do you mean our innate, hardwired seeming reactions—like it seems we have an innate fear of snakes, bugs, and everyone thinks poop smells terrible, and dead people smell terrible?

**S: It ties into it to a degree. However, instincts are important. Emotions are important. They are very deeply ingrained in this very ancient brain of ours.**

R: We tend not to examine that stuff, question that stuff. We take the way we innately feel about things at face value and tend not to overly evaluate them. I've never smelled a rotting dead—I haven't smelled a corpse, say, but I know from what I've read that it's a smell that will make you puke, and it's a hard smell to get out of your nose. It's just the worst smell ever. There's nothing inherently offensive about the smell.

Some part of us is making a judgment about how horrible that smell is. That's hardwired in because corpses are, I assume it's hardwired in, a health hazard. You want to stay away from them. You want to bury them, get away from them.

**S: Have you heard of the lancet fluke (Encyclopædia Britannica, 2008)?**

R: Nope.

**S: It is a parasite that gets into a stomach of a cow or a sheep, drives into the brain of an ant, hijacks it, makes the ant go to the high part of a blade of grass, clamp down on it at night...**

R: ...where it'll get captured by a bird.

**S: Not quite, possibly others, but not this one, it will clamp to a higher plateau—branch, leaf— and then be grazed by a cow back into a cow stomach to lay eggs and continue its lifecycle.**

R: Nasty, there are probably dozens if not hundreds of brain hijacking parasites. I read about a threadworm that takes over grasshopper brains and makes them go down themselves, which facilitates part of the worm's lifecycle. There's toxoplasmosis, which makes mice and rats find cat urine sexually arousing, so that they get caught and infect the cat with the toxoplasmosis (Encyclopædia Britannica, 2013). They're all nasty. They're all the stuff of horror movies.

[End of recorded material]

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## **Ask A Genius 100 – Life and Death (15)**

**Scott Douglas Jacobsen and Rick Rosner**

**February 25, 2017**

[Beginning of recorded material]

**Scott Jacobsen: To the beginning of the conversation, the kind of the religious and modern secular taboos around sexual relations, and the way that bodily functions are all haphazard—boogers, eye crust, ear wax—as you were saying—poop and pee—all of these things (Ahl and Steinvorth, 2017; Barclay, 2014; Sonny, 2012). Everything functions sufficiently well-enough to get the genes passed on (Moran, 2006; Rifkin, 2013).**

Rick Rosner: We're okay with our bodily functions. We're okay with everything that we do on a day-to-day, moment-to-moment, basis. We're okay with our functions.

**S: Yeah.**

R: Because we wouldn't be productive otherwise. You can become philosophical and cynical and be bummed that we're just dumb animals with limited capabilities, but most people don't go around feeling that way and it wouldn't be productive if we did. The everyday pleasures of life are such that—unless you're a depressive person—they make up for the grossness of life. But sex is where our drives get weirdly perverse.

It's largely because sex drives want us to do things that are against our best interests as individuals. So stuff that is sexy has to be really sexy. It's deeply, deeply wired in. Where it's crazy that people can be aroused by cartoons.

**S: [Laughing] People can be aroused by pixels on a screen.**

R: It's crazy that super hardwired, super-forceful reactions to rounded shapes—to boobs and butts—at different points in our history, what has been exciting—it's always been ridiculous but sometimes it's extra ridiculous—like 100 years ago or 120 years ago seeing a chick's ankle was sexy because you normally never see them, because everyone was wearing floor length skirts and getting a glimpse up somebody's skirt to the point you can see their lower leg, somebody's lower leg, that was bonerific.

**[Laughing]**

R: When I was growing up, seeing panties in certain circumstances—sometimes you felt sorry for them that they didn't know their panties were on display—

**[Laughing]**

R: But generally, if you saw a cute woman's undapants, that was the most, that was the best, most exciting deal!



[Laughing]

R: There's an entire set of sexy calendar art from the 60s. They are these drawings of a cute woman who is bending over, where she is facing us. She's dropped her stuff, or a dog has wrapped its leash around her legs, and she's bent over trying to deal with what I going on. You can see that her underpants are around her ankle, just fallen down, and the wind is blowing, and her skirt is blowing up, but we can't see what is up her skirt.

But there's a guy behind her who is seeing the back side of her, and has a super excited look on his face. That's such a specialized and crazy for of bonerificness, that is shows how crazily hardwired we are to be sexually oriented. You look at fashion. One aspect of fashion is to, as it changes from trend to trend and decade to decade, find what new parts of the body can be exposed.

Starting in the late 70s and moving through the 90s, it was the leg holes on underwear—women's underwear—and leotards, and swimsuits, got higher and higher to exposing more and more of the upper thigh, toward the iliac crest, to the culminating in thong-type underwear and swimsuits, and all of that (Taylor, 2017). And then, in the 2000s, there was an opposite trend, instead of things moving up, waistlines moved down, and down, and down, until, on guys, the just above the pubis became an exposed erogenous zone or erotically exciting zone.

Where you've got the lower ab muscles right above the pubic hair, unless the guy's manscaped, and also where the abs connect, there's a triangle shape where the abs stop and the leg muscles come up underneath. In dorm posters of the 80s through now, I guess, under-boob is very exciting. Shirts that are too short that stop just below the nipple, but you can see the underside of the boobs.

Side boob became a thing. And then, in the past 8 years, butts have exploded. In the 70s, the skinny tone Jane Fonda body was popular and in the 70s and the 80s, the jacked Schwarzenegger muscly male body was considered the thing. Now, fat asses are the thing.

[Break in the recording]

R: Sex feels like you're getting away with something. It is an even more perverse example of the counterproductive aspect of sex. It is something that you shouldn't be doing and it's thrilling that you shouldn't be doing it. But it's confusing how that has to be the mechanism. There's a whole set of aspects of non-exalted human behavior. It is kind of necessary to fully portray humans—like the vision of the future in *Star Trek* I find troubling because it has no foolishness (IMDb, 2017a).

It is deeply serious with not a lot of foolishness. *Blade Runner* world is full of crap, crappy advertising, and a lot of shoddy stuff (IMDb, 2017b). That feels more real than the *Star Trek* future, where everyone is walking through futuristic plazas and everyone is clean. There's a whole bunch of foolishness in the human endeavour. I'm not saying human endeavour is doomed to fail and therefore foolish.

I'm saying no matter how technically adept and sophisticated we become there'll always be a bunch of ridiculousness going on.

**S: Even our archetypes are like this, the ancient Greeks and the pre-Socratics, even the Romans, (Adkins & Pollard, 2010; Encyclopædia Britannica, 2016) their forms that they had set up for the gods were involved in all sorts of crazy stuff, but they were crystallized aspects anthropomorphized.**

R: The gods were assholes. Every culture has the trickster character who is an asshole. So, yea.

**S: Largely, our evolutionary—people like to use the word— ‘baggage’ is inevitably popping up in all sorts of ways—in culture, in religious forms – the Greek gods, the Abrahamic God in the Old Testament, even in the ways we conduct ourselves now in ‘civilized society’ you note the 8-year trend in fascination with rounded body parts, which is part and parcel of being human. It’s part and parcel of our baggage (Creach, 2016).<sup>31</sup>**

R: We become less foolish as life becomes more precious. Where, say in the 1930s, I don't think car seats had seat belts at all. They had metal dashboards. People would get in horrifying car wrecks. People weren't overly concerned about that. “That's what happens,” but the average lifespan in the 30s was in the 60s. Now, the average lifespan pushes into the 90s. Now, life is more precious and we have more technology to avoid risk.

So we can talk about if it is a trend for people to behave less foolishly into the future as existence becomes more valuable.

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<sup>31</sup> *Violence in the Old Testament* (2016) states:

*“Violence in the Old Testament” may refer generally to the Old Testament’s descriptions of God or human beings killing, destroying, and doing physical harm. As part of the activity of God, violence may include the results of divine judgment, such as God’s destruction of “all flesh” in the flood story (Gen. 6:13) or God raining fire and brimstone on Sodom and Gomorrah (Gen. 19:24–25). The expression may also include God’s prescription for and approval of wars such as the conquest of Canaan (Josh. 1–12). Some passages seem to suggest that God is harsh and vindictive and especially belligerent toward non-Israelites (see Exod. 12:29–32; Nahum and Obadiah), though the Old Testament also reports God lashing out against rebellious Israelites as well (Exod. 32:25–29, 35; Josh. 7).*

*Christians have wrestled with divine violence in the Old Testament at least since the 2nd century CE, when Marcion led a movement to reject the Old Testament and the Old Testament God. The movement was substantial enough that key church leaders such as Irenaeus and Tertullian worked to suppress it. In the modern era interpreters have taken up the problem with new vigor and have treated it from fresh perspectives. Some attribute the Old Testament’s accounts of God destroying and killing to the brutality of the society that produced it, but they believe modern people are able to see the matter more clearly. They find support for this view in the apparent acceptance of cruel practices of war by Old Testament authors (Num. 21:1–3; Judg. 1:4–7; 1 Sam. 15). Within this way of reading is also a feminist critique that sees in the Old Testament a general disregard for women, illustrated by some passages that present sexual abuse as well as general subordination of women to men with no explicit judgment on such atrocities (Judg. 19; Ezek. 16, 23).*

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[End of recorded material]

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# Ask A Genius 101 – Life and Death (16)

Scott Douglas Jacobsen and Rick Rosner

February 26, 2017

[Beginning of recorded material]

**Scott Jacobsen:** We talked about the depressing aspects of life and death. Death in its rather bleak aspects as well as life in its gross aspects—sex, bodily functions. Another aspect that religion seems to have an upper hand on a lot of secular culture is reverence around life and death, e.g. the rituals, the pageantry, the music that arouses the “passions” for people, which, apart from the truth claims about things, do perform an important function for dealing with death, dealing with grief, death of others, and acceptance of one’s own finality at some point (Religious Movements, 2017).

**Secular culture is only recently coming to terms with this, e.g. atheist churches. Let’s dig into this (Gibbons, n.d.).**

**Rick Rosner:** To start out, you have to attempt to separate the positives aspects of death from the rationalizations for death, which is probably really hard to do in the same way you can’t see a face as anything else other than a face. Your brain sees faces as faces—to see them as anything else is super tough. Death is so a part of our biological existence and culture. It is hard to separate what might be the positive aspects from things that make us feel better about death.

But with that being said, one thing is it puts a frame on your life. It’s got a beginning and an end. You can grade yourself on what you did within the frame. That seems like half-rationalization at least. Another aspect is it seems impossible to live for infinity time, for an infinite time. it’s unlikely. Anything short of infinite time equals some kind of death. It is unlikely that the universe itself will exist for an infinite amount of time.

There’s the information processing aspect of death. Heinlein talked about this (Encyclopædia Britannica, 2015a). Where if you live long enough with a finite brain, you’re going to run out of storage. You can only store so many years of experience. Unless, you can find more and more compact ways of storing information. But even so, you’re going to run into a limit. Your hoped-for infinite life is going to be finite because your brain can only hold a finite amount of information

To live for infinite time, your brain would have to be infinite big, or you would have to reconcile yourself—even though, you may be living forever. You may not be remembering forever. But it’s not really a relevant discussion because we’re so far from infinite time. We’re so far from having lifespans that really deal with the storage capacity problem. A rationalization for being okay with death is that your body wears out.

That is more and more of a rationalization because we’re on the verge of all sorts of techniques and technology that make much of your body as replaceable as a carburetor in a 1958 Chevy. A semi-rationalization is that instead of your body wearing out. Your worldview wears out. The

things you believe anchor you to a particular era. Time moves on and you become obsolete—well, we all encounter aspects of that.

To some extent, we're all the grandma who can't figure out how to operate the DVR because things are changing pretty fast. The solution isn't to just die, or to keep up, or to put yourself in an informed enough position to know what to keep up with. A big argument, which will become more prevalent over the next century and a half, is that we just don't matter that much as humans or as individuals.

The same way it is hard to feel that much sympathy for an aphid, which is a tiny little almost invisible bug that sucks juices out of plants. If you killed an almost invisible bug, most people would not feel sympathy for that entity's loss of whatever brain space it had. Entities will come along who are merged people or are people plus AI, or AI constructs. Whatever comes after us, as those things dwarf us in terms of information processing and perceiving capacity, they'll become—easier isn't the right word, it'll make the feelings of one primitive human not matter that much.

The counter to that is some Golden Rule thing. We are humans. We know how it feels to be us, and to us it matters. Another argument is that once we really enter the thought-sharing economy or information world, or planet-spanning neural net glob of merged brains and AI. That if you can spit out enough of your thoughts into the world blob. That'll have the thinking processing capabilities of trillions of individual brains.

Once you add your flow of thoughts to that world blob for enough years, pretty much, you become a part of that. Your thoughts are integrated into it. You acquire a kind of immortality where you lose your individual body and brain may not be seen as tragic as it would be now. The world blob may act as a weird technical afterlife. And leading to some kind of fifth argument, which is death is an okay thing if it's not a for real death.

If we can replicate our consciousnesses beyond the body, then the death of the body is no big deal. Given the right conditions, nobody wants to end up—there's a Philip K. Dick from nearly 60 years ago called *UBIK*, which gives people technical afterlives (Encyclopædia Britannica, 2015b). But they're very constrained and filled with fear. Everybody is kind of plugged into a not very good simulation of the world after a fatal accident that wipes out a rocket ship full of people.

But if you can move into either the real world or into a combination of the real world and cyber worlds with your replicated consciousness, and the cyber worlds aren't sucky, physical death might be fine and economical and it might be the right thing for the world. I assume that at some point in the next 200 years, when it becomes possible to live indefinitely and to remove consciousness from the biological body, the steady increase in human population will level out because there will be a number of less expensive ways to continue your consciousness.

In the same way, people in the next 50 years will each less and less naturally raised meat because of how much energy it takes to grow a cow. More and more people 150 years from now may choose to live non-biologically because it is cheaper both for the individual and for the planet.

[End of recorded material]

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# Ask A Genius 102 – Other Minds and Octopi

Scott Douglas Jacobsen and Rick Rosner

February 27, 2017

[Beginning of recorded material]

**Scott Jacobsen: You were describing a book a little bit off tape.**

Rick Rosner: It is called *Other Minds: The Octopus, the Sea, and the Deep Origins of Consciousness* by Peter Godfrey-Smith. This guy has spent a lot of time thinking about consciousness and observing octopi, which are pretty smart. They have 500 million neurons compared to our 100 billion neurons. Quite a few less, but still enough to have fairly sophisticated behavior.

I quite eating octopi because they seemed too smart to eat, which is dumb because pigs are smart too and I'll eat them. The thing I think is interesting is Octopuses became really smart independent of us, not as part of our line of evolution because our last common ancestor with octopuses was hundreds of millions of years ago. Our last common ancestor was some little worm that was a few millimeters long and couldn't be thought of as doing much thinking at all.

It was a dumb little worm. Then our evolutionary track, we got really smart over the next half of a billion years, so did octopuses, but independently from us. Which means that brains—octopuses, there are all of these stories that if they don't like you then they'll squirt a jet of water at the back of your neck. They know how to unscrew jars. They know how to squirt water at light bulbs because they don't like bright lights.

Some are nice. Some are dick-ish. They, maybe, do a kind of art, but they like arranging things on the sea floor in pleasing patterns. Stuff that indicates smart-ish behavior. It grew, not as part of a ladder to us, as a separate ladder than us. You can say intelligence developed at least twice. Two separate instances, you might be able to say birds. I don't know if birds are smarter than dinosaurs or birds are smart because dinosaurs were smart.

Maybe, birds became smart in their own line. I argue the more times a thing independent evolves on Earth, then the more likely that thing will evolve in organisms on other planets, like eyes. Eyes seem to originate a lot. There's a thing they call a teleological gradient, which is deceptive because teleology says something is designing us. You could call it the riches of existence. Basically, the world is a place where there are bread crumbs scattered around.

Like a video game, there are pieces of treasure around. With these pieces of treasure, you can earn these pieces of treasure by evolving to certain levels of sophistication or skill at existing in an environment. Though that involves a certain teleology, but saying it is random bread crumbs spread around. Things will evolve if there is a pathway for things to evolve. If there are physical structures that are possible, that can exist. For instance, it would be helpful to evolve the ability to time travel or have anti-gravity.



But you can't evolve that because those things, as far as we know, aren't physically possible. But eyes are physically possible, and are helpful. Every step from light sensitive spots on your skin all the way to fully developed eyes are helpful. There's a nice path of helpfulness, and it's physically possible to evolve those things, then it seems those things will evolve often in more than one organism.

Means of locomotion, various means of locomotion have evolved numerous times. The one thing that it is hard to know whether it evolved more than once is life itself, whether life originated on Earth more than once. It is hard to know because life originated billions of years ago, and it originated in forms that don't leave evidence behind. Even if this junk did leave fossils, not much got left because that's enough time for the Earth's surface to be recycled a bunch of times.

You have to find a place that has been floating away from clefts in the tectonic plates for a long, long time. And life as we know it originated closed out opportunities for other life to arise once it took hold and started changing the Earth's physical environment and spitting out oxygen, and proliferating all over the place. Other possible forms of life just kind of—that opportunity was lost, though we do kinda know life went from single cellular to multicellular more than once.

You have plants. You have animals. You have a few other kingdoms, which, I think, reflect a couple other times when life went from single to multicellular. If you want to go to the Drake Equation or a Drake type of thinking, the Drake Equation is this deal that combines all of the probabilities for all of the necessary ingredients for life originated someplace else and combines them into one equation.

One thing you need are planets in places where you can get enough chemical activity for life to evolve. You don't get good chemistry in a Mercury-type orbit too close to the Sun. You don't get it too, too far away from the Sun. But in the last 5, 10, years, we've seen that part of the Drake Equation. Whatever he originally calculated has been blown away because it looks like the number of planets in the universe might be equal to the number of stars.

There seems to be at least one planet per star, which means that there's close to that number of planets, in terms of the exponent you hang on it, in temperate regions—in that zone that permits life. The Earth orbit, perhaps Mars orbit, that distance from a star. So you can have things are warm enough for chemical activity, but not too warm. So that part of the Drake Equation is richly satisfying. Looking at how often the various steps in life have originated on Earth, it makes a good argument that if life originates at all. It has a fair chance of getting fairly fancy because of the treasures of existence. That the advantages to be had by taking the next steps in evolution, even though those steps aren't designed, are permitted because they have given an advantage. There's advantage in perception, in mobility.

The main bottleneck to being fairly convinced of life elsewhere is that first step of life originating at all. Once you get life, and looking at the history of life on Earth, it's not unreasonable to imagine that life will evolve to take advantage of increased complexity over, and over, again throughout the universe.

[End of recorded material]

## Ask A Genius 103 – More on Octopi

Scott Douglas Jacobsen and Rick Rosner

February 28, 2017

[Beginning of recorded material]

Rick Rosner: This book, *Other Minds: The Octopus, the Sea, and the Deep Origins of Consciousness* by Peter Godfrey-Smith, talks about sentience and consciousness, which, I guess, sentience is a not quite conscious level of ability to think and perceive – but not as high as other animals. You can divide things up like that. Then he talks about a researcher who thinks that at the very threshold of consciousness or sentience, you would perceive the world as almost nothing.

That would be perceive as white noise, which is a good, but not, great analogy because when somebody says, “White noise,” I think of looking at an old TV screen. An old TV from the 70s goes off and you only see snow, which implies a perceptual framework that is well-enough developed to perceive static or snow as static or snow, but that’s not what they’re saying. They’re saying that not only are you experiencing white noise.

Your perceptual framework is so non-existent that you can’t even perceive white noise as white noise. You perceive almost nothing. It is like a vague blur, except that it is not a vague blur within some framework that allows you to perceive something as vague. Your framework is not that big or that precise. Off tape, you talked about a system that is able to perceive a white pixel or a black pixel as a base level of perception.

That runs into the same problem as white noise. In that, when I picture a pixel, I picture a white square or a black square. And if your system is only able to perceive one of two state, those states are so blurry—it’s bootstrapped chaos. Not only are you perceiving almost nothing, but you can’t perceive anything beyond almost nothing because you don’t have the perceptual or cognitive equipment.

There’s only vagueness, but you don’t know it’s vagueness because that would imply more perception and cognition. So just lights are not even on—I mean, anyway, the book also talks about how—

You mentioned how in a really low-level perceptual system, say one that has cognitive capacity of 100 bits. How 85 of those bits might be administrative and only 5 or 10 would be the picture of the world that you have, that reminded me of something that is talked about in this octopi book, which is that octopi neural layout, structure, is much less centralized than ours. Almost all of our cognition takes place in our brains.

It takes less to run our bodies. It takes less cognition to run our bodies than an octopus because we have bones, which limits the range of configurations our limbs can take because everything is locked into place—planes of motion. We’re solid and octopi almost entirely soft and mush. There’s very little that gives them a definite, Erector Set, Tinker Toy—[Laughing] I am mentioning all of these toys that nobody knows anymore—Legos kind of structure.

The only bone or hard structure in octopi is a beak. They used to shellfish, but over time their shell got absorbed into their body. But anyway, according to this book, each of their limbs has kind of its own, not quite brain but, highly developed cognitive apparatus that does a lot of the positioning, maneuvering, of the arm somewhat independently of the octopus's brain because it takes so much more thinking or processing to move around an arm that can take any form, any shape.

So the big boss in the octopus's brain is less aware of the minutiae of the arms and the arms can do all sorts of sophisticated stuff independently of big brain telling those arms specifically what to do.

[End of recorded material]

# Ask A Genius 104 – ‘There’s Just Something About Octopi’

Scott Douglas Jacobsen and Rick Rosner

March 1, 2017

[Beginning of recorded material]

Rick Rosner: The big brain has to some extent trust the arm brains to run their arms. So an octopus’s consciousness is going to be different a little bit from ours. In that, the octopus’s brain is, to some extent, along for the ride of what the arms are doing. We’re usually not aware of the mechanics of walking and they talk about baseball pitchers and other athletes getting really screwed up if they become overly aware of the mechanics of the actions they made hardwired into themselves. If you practice your sport for 12 years, and you’re highly skilled, and if these highly synchronized motions involved with pitching the ball are second nature to you, then you start thinking about them, it can ruin the hardwired elegance and effectiveness of your motions. There moments of greatest focus and athletic excellence that their consciousness—they become mindless, which might mean so much of their mental and cognitive resources are being devoted to super-precise actions in the moment that a lot of the normal chatter goes away.

That’s just for us with our skeletal-based bodies, with limited possibilities for motion. Imagine being an octopus that is trying to run itself while it’s eight arm are doing eight super-crazy, sophisticated things. Octopi can take forms. There was one on the sea floor. They watched it mimic the shape of 8 different sea creatures by reconfiguring itself into what it thought would be best in terms of camouflage. It is sophisticated stuff that the main brain may not always be aware of. It is similar to what you were saying in a 100-bit cognitive system (off tape). Some of those bits may be subconscious and performing sophisticated, semi-sophisticated, functions in some central arena that is watching what is going on. An Octopus is kinda somewhere between human consciousness and, say, ant consciousness. Where an individual ant has ‘meh’ consciousness, it’s going to be in the vague fog of perception that comes from having limited perceptual and cognitive apparatus.

Then you can imagine that ants working together form some kind of greater consciousness, which is really not the way it is. But you can imagine some creature with some kind of swarm consciousness, where the creature is all functioning together—but no one creature is in charge, like bees. Although, bees don’t work like that either. Basically, you’ve got a creature with a thousand separate bodies communicating with each other.

Say a flock of starlings, but starlings don’t work that way either, you can imagine some alien creature, where it’s got a bunch of mini-brains in its thousand bodies and the bodies are connected by some biological wireless server, so the thousand mini-brains in concert form an aggregate consciousness, and the octopus would be somewhere between us with our largely centralized consciousness and—my syntax fell apart. Anyway, we’ve got central consciousness, where we like to think everything we know we know consciously, which is not entirely true—but is more true for us than for octopi. They do a bunch of stuff, but the central brain is not fully conscious of it.

**Scott Jacobsen: Marvin Minsky has an idea. He wrote a book. The book was called *Society of Mind*. I have talked to Sven about this at length. He mentioned that book a lot.**  
**[Laughing]**

R: Yes.

**S: Marvin Minsky's book remains, in basic principles, akin to the idea of a 100-bit—not as in information bits, but as nodes—described before with a certain amount of administrative work, relays, and actual consciousness arena of manipulation of information in addition to the description you've provided of octopi.**

R: Yes, I agree with the society of mind thing. I think there's a mathematics of geometry that can picture the various mind-spaces, or cognitive spaces. Ones that are centralized. Ones that are less centralized. If you cut off an octopus's arm, that octopus can still do a lot of stuff. You can imagine that you can sedate an octopus's main brain, or damage it, and the octopus can still function just by—via—the limited awareness and abilities of the arm cognition.

We've been talking about how a cognitive space or a conscious space—a representation of that information—might look like a universe. In a highly centralized conscious information space, you'd have a highly populated central part of the universe with lots of galaxies going on. You can imagine an octopus's information space that has a less populated active center and a bunch of more self-contained black hole-ish galaxies that only share a limited amount of information that is being shared with the central information space.

A lot of the information never making it out of the arm processing, the fine information being confined to a closed off, semi-closed off, information structure like a black hole galaxy that only gives you a trickle, or only least a trickle, of information that is being processed within the arm. Anyway, to sum up, there's a math for that, for octopi consciousness, for human consciousness, and some kind of crazy swarm consciousness.

[End of recorded material]

# Ask A Genius 105 – The Headless Chicken and Reward (Part 1)

Scott Douglas Jacobsen and Rick Rosner

March 2, 2017

[Beginning of recorded material]

Rick Rosner: Just to mention other forms of not quite consciousness. In the 1940s, I believe, there was—and I want to call him “Sam the Headless Chicken,” but I don’t think that’s what his name was. But there was a headless chicken that was popular for a few months. This guy was trying to chop off this chicken’s head for dinner, but he missed and only chopped off the top of the chicken’s head. Leaving almost none of its brain and just its lower beak.

The chicken still worked. The chicken walked around and did all sorts of chicken behavior. There was enough of a nub-brain that it could perform some basic chicken functions. He had to feed it with an eye dropper in the chicken hole. He travelled around showing people the headless chicken. Obviously, that chicken has very little conscious processing, but the chicken still worked using the remaining processing that wasn’t centralized.

**Scott Jacobsen: If you had the 100-node processor, and if you had the 85 nodes for administrative stuff, the 5 for relaying, and the 10 for conscious manipulation of information, it would be as if you cut off the 5 and the 10.**

R: Yea, something like that. That is kinda a horror theme. I mean, zombies—there’s some kinda possibly deep fear of losing the executive function, the conscious operator. Losing our identity, but still walking around.

**S: People have prepared meals while they sleep walk. People do all sorts of things while they sleepwalk. Automated behaviors, they will then wake up without any memory of it, and they’ll have a freshly made meal ready to go. [Laughing]**

R: Yea. [Laughing] People find that—People like to say that we’re hardwired to be afraid of snakes. I think there’s some deep disquiet about—I doubt it’s a hardwired thing—but, if you were going to make a list of things that make for good horror movies, loss of executive function is one of them. *Stepford Wives*, they’re still walking around, but have been hollowed out. There’s no there there. Anyway, you can probably make lists of dozens of horror movies that scare you by showing people taken: *Invasion of the Body Snatchers*.

**S: We have real life cases of this by way. *En masse*, apparently, we have good research on the impacts of certain technologies on executive function. Executive function is an emergent property as a characteristic of people based on the dorsolateral prefrontal cortex. There’s another part of their brain called the nucleus accumbens. The nucleus accumbens is part of the reward center.**

So, typically, if you have a real-life task or goal that you want to achieve and you struggle for, you have a context surrounding it and a narrative leading up to it, and then when you achieve that goal—you get a 1585 on the SAT, you get a high score on a test, you climb Mount Everest, you ace a dance recital, and so on—then you have a very strong reward, but it is based within context.

The issue is for education across most or all developed nations that are using technologies for certain things, such as pornography and video games, to excess that the typical—they checked in blood flows too—the blood flows that go from the dorsolateral prefrontal cortex—that is for self-control, morality, saying the right thing rather than the impulsive thing, conscientiousness—these behaviors come from the dorsolateral prefrontal cortex and the blood flows there when you're engaging in these activities.

But when you're engaging in excess pornography and video games...

R: You're over-rewarded.

S: ...it drains from the dorsolateral prefrontal cortex and the term is “engorges” the nucleus accumbens. The problem: you get reward without real-life context. So people lose a lot of track of time. People have issues with this new form of addiction called arousal addictions, where you want more of different rather than more of the same with traditional drugs such as cocaine. So people, in a way, if they're losing their executive function through these things, are enacting in such a way, not completely but to a degree, like these hypothetical zombies and Frankenstein, and all of those things.

R: You're making a bunch of babies because you're making them over-rewarded and too easily rewarded. It sounds like *Idiocracy*.

S: It's got electrolytes.

R: [Laughing] Brawndo.

[Laughing]

[End of recorded material]



## **Ask A Genius 106 – The Headless Chicken and Reward (Part 2)**

**Scott Douglas Jacobsen and Rick Rosner**

**March 3, 2017**

*\*This session has been edited for clarity and readability.\**

[Beginning of recorded material]

**Scott Jacobsen: By the way, the research seems to pan out for this being a much bigger issue (educational issue) for boys, and these boys that become young men.**

Rick Rosner: That makes sense because it is much more easy to operate male genitals than female genitals.

**S: Yea, but this is cognitive, this is cognitive.**

R: Yea, okay. You've got the corpus callosum. Stereotypically, and I don't know for sure, the corpus callosum is thicker for women compared to men.

**S: On average.**

R: On average, yes, and stereotypically...

**S: By women and men, you mean the difference between XX-XY rather than the self-perception of social role.**

R: Let's not get into that. Let's just say XX-XY.

**S: I'm just thinking about the genetic package that you come with that influences your cognitive package.**

R: Yea, and speaking of packages.

**[Laughing]**

R: It is easier for men to have orgasms. Men can have orgasms under more circumstances than women. I would guess.

**S: Yea, yea, absolutely, I think that's a perennial truth.**

R: I would think women would need to feel, on average, a number of things. Not just physical sensation, there needs to be some kind of connection. Maybe, some sense of safety, even in scenarios where the—anyway, it makes sense guys are easier to—guys' thinking tends to be less global than women's thinking.

**S: Yea, this shows up in surveys. If you ask men and women, ‘What do you look for in a mate?’ Short-term mates, men and women do not differ much. They look for someone relatively healthy, good looking, and who looks like they would have a decent time with, on average. If you ask long-term, the differences are stark. The men do not change much on average. The women add, maybe, two dozen distinct variables such as ability to provide—so job, job prospects, education, a job with the ability to move up, or simply income, or status, things of this nature.**

R: You can see it in strip joints.

**[Laughing]**

Guys go in and see hot young women. That’s all they need to see. But if they can imagine it further, it is known that skilled female strippers can groom clients, making clients think that they’re the stripper’s special friend. That they’re the preferred client. This allows the clients—the guys who are folding the 20s in half and tucking them in the G-strings—to imagine some rudimentary fantasy being with the stripper all of the time because she is having a terrible home life.

Or there’s the stripper in college myth: ‘Oh, I’ll pay for her way in college.’ Women go to strippers and might see [Laughing] guys with good bodies...

**[Laughing]**

...but do not have their shit together. One of the most skilled strippers that I’ve ever worked with at PT Show Club in Denver is Todd the Bod in the 80s.

**[Laughing]**

Todd was tall. He was tanned. He knew how to move. He had good muscle definition, but I think Todd had 4 kids by 4 different women. [Laughing] It’s harder for women to imagine taking Todd the Bod home for more than the night. It is hard to build a fantasy life around Todd the Bod because he’s not friggin’ Bruce Wayne. Billionaire by day and guy who is weeny wagging by night. Although, that would be a great character.

It is a bunch of guys working at carpentry at Colorado Coal Company. Boulder’s less good strip club in the 80s. The other strippers and I—I was this mess and the other strippers were carpenters during the day—only had one stripper costume, which was the Carpenter. [Laughing] They’d get out there—this is 1981, 82, 83—stripping down there to their tool belt and the knee socks that people wore in the 1980s.

That’s not as take-home-able as a 19-year-old messed up girl. Anyway.

[End of recorded material]

## **Ask A Genius 107 – The Headless Chicken and Reward (Part 3)**

**Scott Douglas Jacobsen and Rick Rosner**

**March 4, 2017**

*\*This session has been edited for clarity and readability.\**

[Beginning of recorded material]

**S: This plays out throughout evolutionary history. It plays out throughout modern dating dynamics. Not in every case, but if you look at the large scale trends, the trends are obvious. And if you don't know, then you probably haven't looked at the data.**

R: And you can take it all the back to—I know there are problems with sociobiology, but there's a lot right about sociobiology, E.O. Wilson's deal. E.O. Wilson is a guy who studied a lot of insects, and based on his study of insects extended his idea to how biology influences humans as well as animal behaviour. One of the big truths of sociobiology is eggs are expensive and sperm is cheap.

A woman has to be more selective in sex partners because she's the one who is going to get pregnant, and be the one who will be raising the kid and wants a male who doesn't flake. The male wants to flake. He wants to impregnate as many women as he possibly can. Well, depending, that's not like—there are different strategies, but the male strategy tends to reward flaky behaviour more than the female strategy.

There are strategies where the male sticks around and he's sure the offspring are his own, which is a big deal in terms of passing on your genes. Though still, if he is raising kids who he knows are his own, if he can sneak off and impregnate other people, and have those kids raised by other people, that's not unheard of.

**S: Some thoughts come to mind. The first thought that comes to mind. I can see some branches of some feminist critiques of sociobiology or evolutionary psychology from the fact that the pill came in, I guess, 1960?**

R: Yup.

**S: So that can attenuate the cultural pressure. The genetics and the developmental structure also interacts with the surrounding culture, so the input is reinforced. So there will be attenuation, but not elimination, of these capacities, like we were talking about the XX-XY cognitive packages we get from genetics, which probably keep a lot of human thinking, conscious or unconscious—non-conscious—on a tight leash.**

R: I've known a couple of guys who were really good at hooking up with a bunch of women. I've read some books on how to do that just because I think it is an interesting, if creepy, subject. One of the major principles of being that guy is letting women know that it is not going to be a

problem. You talked about the pill, which over time has the idea of female contraception. Now, it is widely spread and easily available and takes many forms.

After 50 years, it has, kind of, to some extent become a part of society and along with that, in terms of selling yourself, as a guy, if you're going to be a pickup artist, you have to sell, "This is going to be fun and I'm not going to be a problem." We're going to fool around. You're going to like it, and I'm not going to create any life problems for you, which overcomes—on the other hand, a woman who wanted to be a pickup artist doesn't have to do that kind of thing to any great extent.

A woman can say, "We're going to have sex." A lot of guys, once they get over their initial shock and fear, will be like, "Oh, okay." "And by the way, I'm crazy." Guys would be like, "Well, uh, how crazy?"

**[Laughing]**

But women need—the sociobiological basis you could argue—to be soothed, but that's patronizing; women need to be assured that this sexual encounter is going to be worthwhile. Where guys don't really need that assurance, so even with the pill, even with contraception, it doesn't overcome the basic—and there are other reasons for that. Generally, the on average greater strength and aggression of guys versus women.

A woman who is 128 pounds is like, "Yea, let's have sex," and the guy who is 188 pounds is like, "Yea, okay." A lot of guys would not imagine the woman has a switch blade packed away and will go stab-stab-stab-stab during the sex. Guys don't tend to think of being in danger during a casual sexual encounter; whereas, I would think many women take the potential danger into account—sociobiology aside. So you said you had another thing. You had two thoughts.

**S: The second thought is, there will be cognitive aspects, of choice. Some men will choose, in ancestral environments, to impregnate as many women and possible. So quantity over quality. Other men will choose to invest in one partner and set of offspring for better chances. Both have their advantages and disadvantages in terms of the survival of that particular person's genes. One, you create high quality children with lots of nurturing. The other, you create many, many children who will have less chances of passing on the genes in ancestral environments per child, but over all—just summing them up—you might have equivalent or better chances than investing in one partner and family. So that's the other thought.**

R: Women don't have—those strategies aren't as available to women. A woman is stuck with carrying a kid for 40 weeks and, you know, during that time a guy could knock up any number of women. Also, she's going to be that kid's food supply for many months and, whether she likes it or not, she's more invested and more constrained in terms of her investment in the kid. Biologically, it is up to her to carry the kid. It is likely she'll be the one nursing the kid. It is likely she'll be taking care of the kid's needs during the first few years of the kid's life.

[End of recorded material]

# Ask A Genius 108 – Language and Technology

Scott Douglas Jacobsen and Rick Rosner

March 5, 2017

*\*This session has been edited for clarity and readability.\**

[Beginning of recorded material]

Rick Rosner: Language is troublesome. It occupies a lot of thought—evolution has been part of popular debate for the last 160 years, and language has been one of the more troublesome areas of trying to get a handle on how everything that we are came to be via evolution and whatever other cultural forces made us the way we are now because language is something humans have to a degree that is far beyond anything that any other animal has.

It is tough to come up with how it originated and it's come up with a history of the development of language. In that, it is fairly nontangible. You can't trace the development of language ability in the brain or no one has yet. Anyway, it is hard to chart our history as a species, and I was thinking about that. Also, language is super powerful. It is somehow part of the set of tools that have allowed us to develop technology.

To take apart the world and put it together based on our preferences, other animals are at the mercy of the world to a great extent; we can manipulate the world to a great extent—talk about the little different ingredients. The walking upright, which frees our hands, and lets us manipulate things with our fingers, and then language lets us think more effectively and pass on what we know to other people.

I was thinking about what exactly language does, especially with regard to information-space because you and I believe that any being who is a sufficiently developed information processor has an information-space that can be rendered mathematically once the mathematics exists, and how language might fit in an information space.

Thing one is, for 100s of years, for 1,000s of years, philosophers and scientists have argued that consciousness requires something in the being that is being tested as to whether it is conscious. Among the candidates for that are language, self-awareness—which, at the simplest level, is if you show a being a mirror they understand it is them looking at them in the mirror, and other qualifying characteristics; that if you have that thing, then you're conscious, and if not, then you're not conscious—has been used for a long time to say humans are conscious and the other animals are a bundle of reflexes.

I would go against that with the following argument. You can describe the contents of a being's awareness from moment-to-moment with a set of sentences. You can name what that being is thinking about. My dog, if I am eating, is thinking about what I am eating. There are sentences that can describe that. The dog is thinking about the noodles I am eating. The dog is less focused about its physical space in the world.

If I get up, the dog will try to get up and eat the noodles off the table. You can describe what the dog is thinking, I'm thinking, the situation with the food and table using sentences. The more complicated awareness, the more complicated the set of sentences you need. You could describe everything in a human awareness as any given moment with a set of sentences. It may 1,000 sentences or 2,000 sentences because we're aware of a lot of stuff at any given time.

But what we're aware of is describable in a set of sentences, whether it is a self-conscious thought—like, “I am me in the world,” or “I am getting old,” or “My toes are gross,” or “I feel a thing and that awareness I am feeling is consciousness,” “I have a zit on my butt and it is bothering me—all are sentences describing my state and awareness. That, to me, makes me think there are no special sentences there.

They are all in the way I am listing them. They are all sentences describing moment-to-moment aspects of consciousness. They are all descriptive sentences. You can take away a chunk of those sentences and you still have awareness. You can take away all of the sentences in my current awareness that refer to my awareness of myself, or all of the sentences that refer to language. The package of sentences that describe my state at any time.

You take away those sentences. You still have sentences that describe my current awareness. No particular flavor of awareness within the arena of conscious awareness is the requisite for consciousness. The dog is conscious. The dog has a conscious arena. The dog is coordinating things in its awareness—noodles, table, chair, me, the dog's ability to run and leap. The dog doesn't have words for it.

But it is in its awareness. So there are no special sentences that I have that the dog doesn't have that make me conscious and the dog not conscious. The list of sentences in my consciousness at any given moment is much greater than the dog's list. But we're both conscious but, if you want, to different degrees because my list is longer than the dog's list. And it is not because I have a special list and the dog does not. Boom! There.

[End of recorded material]



# Ask A Genius 109 – Sunsets and Fucking

Scott Douglas Jacobsen and Rick Rosner

March 6, 2017

*\*This session has been edited for clarity and readability.\**

[Beginning of recorded material]

Rick Rosner: Now, to language and to why it's so effective, one is it is compact. I was thinking of two things described by language, just as examples, that are more compact than thinking about the thing itself. The two examples were sunsets and fucking. You can say, "Sunset," and the word sunset is more compact than actually picturing a sunset, especially the mechanics of a sunset—the sun at a position in space, so it is just over the horizon, and an intervening atmosphere, and a beach, an ocean, and the reflective effects, and all of that.

Actually having to think about a sunset is much more informationally weighty than to simply say, "Sunset." It is a compact representation, like fucking—and sorry to use a bad word, the word is so small compared to the conceptual wad of stuff that went into that word. That it is much more compact. So thing one is compactness. Thing two is universally understood within your awareness.

When people developed money, it made commerce simpler because you didn't have to do outright barter. Money become the universal bartering tool. When you have a universal abstract tool that holds value, you can do any transaction, and don't have to worry if someone specifically wants your sheep before you can trade your sheep for adobe bricks or something. You can sell sheep, buy bricks, and don't have to do transactions with people who have bricks to sell and want to buy sheep.

Words are better. They are short and more easily understood by different parts of the brain. They communicate meaning easily among the different parts of the brain.

[End of recorded material]

# Ask A Genius 110 – Words, Sunsets, and Fucking

Scott Douglas Jacobsen and Rick Rosner

March 7, 2017

*\*This session has been edited for clarity and readability.\**

[Beginning of recorded material]

Rick Rosner: Words represent a lot of conceptual work that has already been done. The word “sunset” represents all of the important stuff that we’ve already thought of about sunsets. It carries that with it as opposed to something that doesn’t really have a name like when concrete gets in my neck, and gets dirty and sweaty, and is not quite a zit, but is concrete dust and sweat encrustations that I can find the next day or the day off and then can scrape them off and flick them across the room.

There’s no word for that yet—little concrete encrustations. It took a lot of work to describe what I am talking about and to establish of what I am talking about. It’s not compact the way a word is compact. If there were a word for it, everyone would know the word for it, especially in the concrete pouring industry. Somebody would say, “Jimbo, you’d got a lub on your neck.” Jimbo reaches over and goes, “Oh, yea.” Then flicks it off.

Words represent a lot of work and compactification that’s already been done. If you need to delve more, if you’re reading a *Scientific American*, into whether there really is a green flash just as the sun dips below the horizon, you can kind of open up your mental picture of what sunsets mean. You can do some work on that. So those are the main three things, and a couple other things.

They are—you can imagine if you’re looking at an information landscape, and if words are important enough, you can see nodes in that landscape, where sunset is represented by a little mini-galaxy of information. We know the word sunset carries with it a bunch of the most needed information about sunsets, just enough to communicate that to every other part of the brain, which means that there is probably local and redundant encoding of information throughout information.

Where we have locally encoded and redundant information in our own space, if someone tells you to picture of a sunset, you don’t have to find an actual sunset. You can go to the Internet and find a representation of a sunset. You can find pictures of a sunset. There are available representations of sunsets in lots of places. You can go to an encyclopedia. You can go to an art store.

You can find sunsets all over the place. Local and redundant encoding of stuff. So I would guess that our own, in the interest of efficiency, information spaces have stuff tend to come up not infrequently multiply encoded—coded representations of those things in more than one place because it’s handy. One last thing is when you think sunset. Something happens with the sensory input. Your idea of sunset can be disturbed or not.

Probably, for the most part, not, where you know what it is, it is the Sun setting. The Earth is turning and the Sun is apparently dropping in the sky—ba-ba-ba. You know, the sky gets all pink and so that idea of sunset isn't disturbed generally when you think of sunset. You've got the information node devoted to sunset in the information space. There must be ways to light up the galaxy that signals sunset to the rest of your awareness and says, "That's what you're thinking of," without disturbing that node greatly or by disrupting it greatly.

So you know what a sunset looks like, and you're online on a science fiction site that includes three pictures of suns, and so your idea of "Sun" is disturbed because you've got three images of suns in your mind. That represents a general idea or a number of concepts that tee up that word in your brain because they're relevant. But you can imagine having an experience or seeing something online that alters, significantly, what you picture as fucking.

That means that information node, that galaxy, has to be rearranged, which could mean a bunch of energy flows into that via photons, particles, and radiation, extending the metaphor, and blows up a lot of stuff in that galaxy, or something releases or causes the black hole at the center of the galaxy to spew out a lot of stuff. It takes a long time. A lot of stuff is spewed out and coalesces into stars, the stars boil down, and the galaxy has been rearranged. It's been lit up in a way that's disruptive, but you can also light up the galaxy that hasn't been disruptive. So anyway, that's what I've been thinking about.

[End of recorded material]

# Ask A Genius 111 – Governance and Leadership

Scott Douglas Jacobsen and Rick Rosner

March 8, 2017

[Beginning of recorded material]

**Scott Douglas Jacobsen: Historically, there have been issues with systems of governance and leadership. No system of governance is full proof. We also deal with problems of incompetence in leadership. I would argue, historically, that there are more ways to be an incompetent leader than a competent leader.**

Rick Rosner: When we were talking earlier, you mentioned that Rome had like 5 consecutive competent leaders.

**S: It was around the Pax Romana and cap-stoned with Marcus Aurelius.**

R: Okay, so I haven't read that much about Rome, but the Roman system had a bunch of falseness and hypocrisy built in that what was really going on what wasn't what was said to be going on or what was said to be valued. There were Roman ideals, but those ideals weren't followed to a great extent. Instead, you had a bunch of corruption, self-serving, and power struggles.

The Roman system of conquering the world and bringing the world into the Roman system of commerce. Even though that was presented as a triumphal thing, it was presented an economic thing, an economic thing or for trade. The Roman system was a mess. It functioned for a few hundred years pretty well and it did some good things along with some horrible things, but much of the horribleness was facilitated by the lack of alignment between what was said was being done, what was publicly supported, and what was actually being done and supported.

I think the strength of America up until recently was that there was a reasonably strong alignment between democracy as valued and liberty and economic opportunity as valued and what actually happened. Certain people have always had huge advantages based on connections or wealth, but, in the past, politics was better able to serve the stated aims of the American system: all men are created equal, the American Dream. More recently, you have a political system that seems kinds of intractable or hard to root out, which doesn't serve democracy or equality.

More people vote democratic than vote Republican. Yet, Republicans own the house, the Senate, and the presidency, and are about—as soon as they appoint the next Supreme Court justice—to own the Supreme Court. So all of the major branches of government. This extends to state governments too, where Republicans have done some gerrymandering hocus pocus and manipulations of the system to hold power out of proportion to the level people want them to hold power.

And no one is governing as a centrist. One could've hoped that trump having lost the popular vote by 2.8 million votes would make efforts to try to be a centrist, but he is not; he's being—

he's entirely line up with the Republican agenda, and the Republican agenda, while it pays lip service to things like reducing the deficit, is really about servicing its clientele and its major financial supporters, which as rich people.

Republicans talk about making American life better for regular people, but Republican policy fucks regular people and leads to rich people continuing to reap most of the gains to be gotten from gains in the economy, growth in the economy where middle class wages stayed stagnant for decades now and all of the real improvements in wealth have gone to the upper 1 or 2% of everybody in America in terms of wealth and income.

So there's a big misalignment between what is said right now in politics and what's actually happening.

[End of recorded material]

# Ask A Genius 112 – Corporations, Multinationals, and Government

Scott Douglas Jacobsen and Rick Rosner

March 9, 2017

[Beginning of recorded material]

**Scott Douglas Jacobsen: The nature of the system was developed without modern corporations and multinationals. Modern corporations have enormous wealth.**

Rick Rosner: I agree with you, but I would extend that further. The system, the American system, was developed without any modernity. It was the most modern thing in the world when it was being developed, but that was 240 years ago. And, I mean, you've got gun technology, which is insanely more sophisticated than the guns of the 1770s—which had to be loaded manually one bullet at a time.

And the electoral college, which everybody or many people are upset about, was designed to keep—well, to make sure we had a union to start the country was to make concessions to lower population agricultural slave states. There are, if I had more time to think, more aspects of modernity, which make it harder for the system to function in somewhat, not intangible but, hard to analyze terms.

Modern forms of media have made it possible to mobilize dopes in a way that is unhelpful for the country. In that, 63 million people voted for Trump. Of those, maybe 40 to 50 million are true Republican believers, that believe that Republican values and the Republican party serves traditional values in America that will help the middle class succeed, and of those 40 to 50 million, maybe half are dopes who are voting against their own best interests.

They have been softened up. Reagan got rid of the equal time clause or law, where before Reagan there were rules to not hammering a particular political point of view endlessly in the media. That there had to be balance. That lead to Fox News and Rush Limbaugh. People on that side have had their thinking—I consider it like—tenderized, dumbized, by 30 years of sophisticated Republican branding and rhetoric that's designed to dumb down arguments and make them more powerful in their dumbness.

[End of recorded material]

# Ask A Genius 113 – Human Error and Views of Themselves

Scott Douglas Jacobsen and Rick Rosner

March 10, 2017

[Beginning of recorded material]

**Scott Douglas Jacobsen: Human errors in understanding the world will lead us and have led us, pretty much forever, in repeating the same mistakes. I mean on one superficial level: if we don't understand history, we will repeat it. But another one, I think, is not accepting fundamental and well-substantiated theories in science.**

Rick Rosner: Well, hold on, because, the majority of people—the vast majority of people—can hold wrong ideas about the world and the world can still make progress. Let's just assume, for the sake of this discussion, that science is right. Well, people have only understood the world scientifically for a few hundred years. If you really want to get down to big picture things like the shape of the universe and the large-scale of the universe, that is less than 100 years old.

Before that, you had everybody believing in a variety of mythological and some religious pictures of the world that are pretty much inconsistent with science and what we understand to be scientific reality. Yet the world still made progress, and the progress is often made at not the big picture level, but at the little—people figuring out things to sell things, how to make things, small-scale ideas that through trial-and-error and growing understanding are consistent with the world.

Generally, throughout history, you have a people who know a bunch of small-scale things that are consistent with actual experience and they also know a bunch of mega-scale world-scale, universe-scale, things that have nothing to do with experience and are wrong. So you have to distinguish between beliefs that can be wrong—in that, they reflect a lack of, well, they reflect a lack of actual experience of the big picture of the world, but don't impinge on everyday life.

I guess there are other ideas that a majority of people can be wrong and can impinge on everyday life. And to the horse I keep beating, that idea that Republican ideas as reflected by what Republican government is doing is protecting the middle class, everyday people, is an idea that 10s of millions of Americans have and that idea has proven to be fairly wrong over the past few decades.

The Republican Party isn't functioning for everyday people, even though it claims to be. And people who keep voting for Republicans keep voting against their interests. Things I thought were economic truths, like when you go into a recession or a depression, you spend your way out of it via the idea of Keynesian economics. That if economic systems—if people are going broke and the whole country is going broke, and people are freaking out in a financial crisis, then create liquidity, which is what they did during the Depression and what Obama did with some degree of success during the Great Recession.



I thought that was settled economic policy. Republicans keep arguing against it. But now that there's a Republican for president, they might remove the purse strings a bit and spend more on infrastructure. Spending that was denied Obama because he wasn't their party of their race.

[End of recorded material]

# Ask A Genius 114 – Frippery and Foolishness

Scott Douglas Jacobsen and Rick Rosner

March 11, 2017

[Beginning of recorded material]

Rick Rosner: We've talked for 20 minutes trying to select a topic. We settled on entertainment. I'm going to be 57 in a couple of months. And I remember the 60s. There was a generation gap, which was largely between the young, people under 30, and everybody else. It was an entertainment gap. Younger people had their own entertainment, and there was a political gap. Younger people were pissed off about the Vietnam War and the stiff boringness of standard society.

Then older people, many of them, were the silent majority. Nixon voters. People got dressed up in a suit and tie with short hair and went to work every day. Of course, those were extreme characterizations. There were plenty of people who were older who loathed Nixon. And in the 70s, especially as the 70s moved on, there were people older than 30 enjoying the sexual revolution.

My mom's been married twice. My first stepmom was married three times. My dad was married three times. I have four siblings or ex-siblings. Basically, nobody has the same two parents. Things got loosened in the 70s. The silent majority did not dominate for the entire decade. Anyway, you had this gap at the end of the 60s and early 70s, where there was the standard world of entertainment, which was much smaller than it is now in terms of options and in terms of what there was to know. You only had 3 broadcast channels, not including the local PBS.

You had no Internet or social media, and no video games. So people were pretty much familiar with the standard entertainment, but because there was no Internet for people to inform themselves. You needed to be young. You need young friends to be well versed in Hippy entertainment and entertainment on the other side of the era gap. Every era until the current era has had divisions in society that we reinforced by a scarcity of information.

That includes the generation gap of the 60s. Now, everybody can have access to whatever they want whenever they want, and there's a lot to have access to, and the world of entertainment is super fragmented. Dozens and dozens of TV channels and a few other hundred that are not-so popular. Thousands of streaming TV shows and movies, and a whole world of video games, and all sorts of bubbling topics of the moment on social media.

So everything has been blasted apart. At the same time, people could more fully inform themselves about what's going on because the information is more readily available. So nobody under 80 doesn't know who Justin Bieber is to some extent. So the world of entertainment—I haven't seen statistics, but I would bet we spend more of our time being entertained in one way or another than any other group and at any other time in human history.

We can look at what entertainment does for us. I think it does three things. Entertainment informs, represents, and empowers; good stories, compelling stories, tell us how the world is and

people are. So there's information there. We, as generalists, as general exploiters in the world, which is what humans have evolved to be, we love information, especially the tough, nasty, semi-taboo information. It is not multiplication tables. It is "who is secretly gay?"

**[Laughing]**

That's more 10 years ago, when gayness was less accepted—10, 20, and 25 years ago. It is that kind of secret stuff that is juicier. And then entertainment empowers via wish fulfillment, and entertainment represents; in that, you pick who and what you are a fan of, and you empower through your shared connoisseurship with your tribe. You find other people who are into what you're into via social media and sometimes in real life.

You band together to support the entertainment providers who speak to you, and it's mutually empowering for both the entertainment people and for the entertained. And we can talk about one more thing about entertainment. Entertainment is important. It is, of course, frivolous bullshit, but at the same time it is important. In that, when you look at bad versions of the future as seen from the past, they were sterile and uninteresting.

They were sterile and unentertaining and not filled with the entertaining ephemera that our world is filled with, which is unlike the *Star Trek* world that is pretty blank. The worlds of *Minority Report*, *Blade Runner*, *Idiocracy*, where every square inch of your visual space is filled with advertising or something trying to grab your attention, which is closer to the way we're finding the world than the way *Star Trek* presented the future.

The world is never going to grow up and give up entertainment as our technology becomes powerful, then our frippery and foolishness and entertainment will also grow more powerful and sophisticated, and it performs a function. It informs us in a nice way, in a way that we enjoy. We know stuff via entertainment without having to have gone through the formal learning process, which means the formal learning process is in trouble because it is less fun than learning via crap.

[End of recorded material]

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