Re: Does restriction to sexual reproduction speed evolution?

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Hello,
What is the opinion of
the members of this group regarding this notion:
That sexual
reproduction, of the kind that Humans practice, may increase the rate at which a species improves genetically as well as the rate at which it can adapt to changes in its environment.

Response:
I don't think so. "Unregulated" Human sexual reproduction of humans has led to increasing environmental problems e.g. famine, crowding pathologies, resource shortages, poverty, genocide, etc. I'm not saying "unregulated" human sexual reproduction is responsible totally for these events but it has contributed. Disturbingly, there are also those who use the problem of human overpopulation as a platform to advocate the removal of the "mentally weak" and physically weak". Of course this is just eugenics in a different package and by the insistent tone of these eugenics advocates they want to power to force these meaures on a population.

So I don't think that sexual reproduction, of the kind that Humans practice, may increase the rate at which a species improves genetically as well as the rate at which it can adapt to changes in its environment. Because of modern medicine and technology (at least in the industrialized West) natural selection no longer works as effectively as it did in the past. But "biologically" speaking humans are no different than they were thousands of years ago. There is this conflict between modern medicine and technolgy and our Darwinian nature. Even in the U.S. which arguably has among the best healthcare in the world millions are uninsured and insurance companies and hospitals compete ferociously in a competive market over profit.

Darwin and Malthus noted, "They realized that producing more offspring than can survive establishes a competitive environment among siblings, and that the variation among siblings would produce some individuals

with a slightly greater chance of survival. If this is correct than one can surmise eventually human overpopulation will result in massive natural selection and some individuals will have a slightly greater chance of survival. No one can dispute the world is currently overpopulated by humans and that the world is an extremely competitive environment.

If Darwin were alive today I think he would be amazed at how many human on earth there were and that natural selection hadn't culled many of them. But advances in science, technology, medicine and cultural evolution have weakened natural selection. This is extremely dangerous because it puts the human species in a predicament where natural selection is no longer as effective. The theoretical question is should the human species continue to rely on natural selection which is often brutal and has been described as "red in tooth and claw" or should it draw its sights on future hopes of modifying natural selection through biotechnology, gene therapy, genetic engineering, etc.

The problem is, however, even if one endorsed the latter we are no where near to modifying natural selection. I'm not talking about modern medicine, science and technology which allows a minority of individuals to live who would have otherwise been culled by natural selection. Or children inoculated against diseases which wouldn't have been culled by natural selection. These are environmental agents acting against possible natural selection. I'm referring to actually altering the unferlying genetic mechanisms which are responsible for natural selection. That is a tall order and I don't expect any headway made on it anytime soon because so many traits are tied up with Darwinian evolution e.g. natural selection, sexual selection, etc.

Two suggested reasons
for this effect are:
1) This kind of reproduction creates a collection of individuals (almost) all of whom are genetically unique. This increases the range of genetic diversity from which to draw upon as a resource when confronted by an environmental challenge.

Response:
Yes, that is what Malthus and Darwin basically stated. The problem is natural selection has been partially stripped due to advances in science, medicine and technology and the overpopulation of a species which Malthus and Darwin envisioned was a part of natural selection and not divorced from it. Today, human overpopulation has partially exceeded any utility it has with natural selection. To advocates of eugenics, who acknowlege natural selection is glacially slow to begin with, use this as an excuse for their eugenic proposals. This is potentially dangerous as it alludes to involuntary measures and infringing upon the civil rights of disenfranchised groups. A more sensible approach would be for worldwide governments (aside from those few who have very low birthrates) to fund more measures to regulate human sexual reproduction through contraceptives, surgical contraception, abortion, etc. And

pressure should be put on the Vatican to renounce its policy against birth control. There needs to be an effort at outreach for funding and education in areas which are traditionally hostile to birth control.

Perhaps if there were a quarter of the people in the world there are there wouldn't be the resource shortages, as many famines, crowding, etc. as there is. Maybe there wouldn't be as much pollution of the environment. There would still be fierce competition but it would be limited.

2) Furthermore, male competition constitutes an additional stage of refinement that pits genomes against one another in order to measure the relative fitness of each.

Response:
This is sexual selection. And it has existed in humans for thousands of years.

I am asking this question because I am struck by the observation that Humans, although not necessarily superior to other species, seem to have "traveled the farthest distance" evolutionarily, of any species. At least insofar as cognition and information processing are concerned. It seems that we have gone "a greater distance" in this respect, from our starting point (of, say, the anemone?), than other types of organisms.

Response:
Yes, in terms of cognition and information processing but what possible ultimate good has it done us? The world is filled with terrorism, nuclear weapons, pollution of oceans, mass extinction of species, pollution of biosphere, famines, wars, consumerism, rampant competition, crime, corruption, etc.

All things being equal, I might expect organisms capable of asexual reproduction to be better equipped for survival since their line will not die out simply because they are separated from an individual of the opposite sex.

Response:
Actually you may be right. Bacteria essentially reproduce asexually and viruses are in a kingdom of their own. Bacteria has existed billions of years before we have and if we kill ourselves off the planet they will still be there. As Stephen Hawking states, "It's uncetain whether intelligence has any longterm survival value. Bacteria do fine without it."

So, back to my question, what is the current opinion of practitioners in this field of the idea that restricting organisms to sexual reproduction may, in the long run, increase the rate at which they evolve?
Thank You,

John Leonard

Response:
I don't think restricting organisms to sexual reproduction in the long run increases the rate at which they evolve. I'm speaking of humans here although your question was obviously broader. Natural selection takes a glacially long time to result in evolution or new species and of course others would add other factors in evolution such as variation, sexual recombination and genetic drift. At this juncture in human evolution we can't wait up for Darwinian evolution to effect changes to bring us in line and make us adaptive to our current environment. So sexual reproduction based on natural selection will not increase the rate at which we evolve e.g. become adaptive to our environment. What does stand a chance of increasing the rate at which we evolve is genetic engineering. But I advocate this very cautiously and am concerned about any forced eugenics programs or misuse of this technology. I don't see its possible "real" benefit for at least a couple hundred years.

"It's uncertain whether intelligence has any long term survival value. Bacteria do quite well without it."
Stephen Hawking