

INFINITE POTENTIALS EPISODE I, STAYING ALIVE

Welcome to the Infinite Potentials Series of Netcasts sponsored by the International MindFitness Foundation. My name is Dagne Crane. Episode I, entitled Staying Alive is a presentation by Adam Crane addressing one of the great opportunities and dangers facing humankind today - Radical Life Extension which includes quality of life during the aging process as well as quality of the dying experience.

I overheard a man describing how he would like his late years to unfold. It went like this: "Healthy, happy, creative, loving ... dead". That sounds pretty good to me. No long period struggling with the diseases of aging, if I get to choose. How about you? Like most of you I learned at a young age that it is foolish to take staying alive for granted. You have to work at it and if you also want to be healthy and have a really good life you have to work extra hard or be very lucky or both. Sun Tzu said, "Opportunities multiply when seized". I'm of the "make your own luck" school.

I was so enthusiastic about improving my own mind and health that I decided to make a career out of it. During decades of training others (and myself), I synthesized a collection of principles and strategies, focused on the science and art of enabling ordinary human beings to unfold more of our latent, mind / body potentials. I call this way of learning MindFitness Training in order to distinguish what we do from other often excellent but differing approaches.

Obviously, if one is improving one's consciousness - the quality of life, as one ages, must also improve. An added benefit is that at least statistically the length of life will also increase. Studies show that people who are able to live according to the principles we are discussing are increasing their life expectancy at unprecedented rates. So, even without adding the power of radical life extension science - those, who use the tools we already have are extending their lives in ways which are wonderful, but threatening to some. Think of it, the world has quadrupled its population within the past 100 years. This is creating apparently insoluble problems.

Dagne: Einstein said, "It will require a substantially new manner of thinking if humankind is to survive"?

The Infinite Potentials Series is devoted to doing what we can to encourage the emergence of a new manner of thinking. I believe this new manner of thinking might see this rapid escalation of life expectancy as an incredible opportunity disguised as an insoluble problem.

Another one of the greatest challenges facing humanity is extinction during the next century. Some prominent scientists calculate that existential threats such as nuclear war, pandemics, technology gone awry, environmental disasters including things that are not our fault such as asteroids or being gobbled up by a black hole gives us about a 50% chance of survival for another 100 years. We intend to look at the existential challenges in another Episode. But if for the moment we assume that somehow we do

manage the existential threats then an incredible, almost infinite potential emerges. In fact, some scientists are referring to it as a kind of singularity. A singularity, you may recall is when something happens in nature which was unpredictable according to the laws and principles so far discovered by our science. An example would be the breakdown of the laws of physics as we now know them once matter has moved beyond the event horizon of a black hole. Or how the universe exploded from an infinitely small point as in the Big Bang Theory. Personally, I think the great evolutionary leaps that have taken place leading to modern humanity, specifically Homo Sapiens Sapiens, do qualify as singularities. Although the theory of evolution explains much of how we got to what we are now, there is also much that is quite mysterious.

My understanding of the scientific studies done so far indicate that even relatively mainstream longevity scientists estimate that those who make the most of unfolding opportunities to upgrade the quality of the aging process are likely to double their life expectancy over the next 100 years. And if that isn't jaw dropping enough, there is a rapidly growing field called Radical Life Extension which includes respected scientists with impeccable credentials. Estimates of how long lives might be extended vary from a minimum of about 150 to much longer. Aubrey DeGray of Cambridge University and Ray Kurzweil, a leading inventor, entrepreneur and futurist make compelling cases that the first 150 year old and the first 1000 year old are probably alive today. DeGray thinks the first 1000 year old may be only about 20 years younger than the first 150 year old. I know, it seems impossible but remember that most scientists and futurists predict that there will be more scientific discoveries in this century than have occurred in the past 10,000 years combined.

Dagne: "If a...scientist says that something is possible he is almost certainly right, but if he says that it is impossible, he is very probably wrong." Arthur C. Clarke

But even if we accept the lower figure of 150 years - seemingly insoluble social, economic, environmental and ethical problems arise. If you and I have strong conflicts about life extension issues then we are likely to sabotage any effort to claim these benefits for ourselves. Of course, none of us are interested in living a long time if we are sick and frail and life has lost its fun. But then the unfolding science of radical life extension is really not so much about helping the old get older as it is about helping people stay relatively young longer. Keep in mind; those actions that increase the quality of day to day life also increase the length of life. We are caught in a sort of tender trap. Of course, some of us who are already chronologically old but still having a lot of fun would not mind getting quite a bit older. So, we are motivated to try to make a real effort to slow and even reverse the aging process if and whenever possible.

Nearly doubling life expectancy in the past century has raised the level of scientific excitement and controversy to fever pitch. We can no longer put off dealing with the ethical and political questions that have arisen. I would like to present an admittedly controversial perspective; but one which, I believe, has great merit and will probably eventually become the status quo.

Dagne: Arthur Schopenhauer said, "All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident."

Ronald Bailey, a prominent futurist and science writer gave an inspiring talk explaining what he calls "the death trance" that humanity is understandably trapped in. After all, 90% of everyone who has ever been alive is dead. You know, 150K of us die every day. That's almost 55 mil people per year - roughly the population of Canada. About 8 minutes have gone by since this netcast began. During that time about 2600 people have died. Two thirds of all people who die do so because of aging.

Think about the knowledge and experience being lost. You could say wasted. Let's just imagine that each person has enough knowledge and experience to fill a book. Of course, virtually everyone would have far more than enough to fill a book but let's just say one book. That's 54 million books per year lost. There are about 16 million books in the library of congress. So we lose 3 times the library of congress every year. And we thought the burning of the library at Alexandria was a big deal.

There is immense controversy over whether we should even try to live longer lives. The people who think science should not focus on longevity are often called mortalists. One of the mortalists, a prominent writer and philosopher, seems to feel life extension is probably a net negative and shouldn't be allowed. In fact, he has said "the worst possible way to deal with the issues of life extension is to leave it up to individual choice. There is no known social good coming from the conquest of death. We can't solve social problems such as global warming, poverty and terrorism, etc. by living longer." The Atlantic Monthly, warned of an impending death shortage. The world must confront a situation it has never faced before. An acute shortage of dead people.

In my opinion, there is another much more upbeat worldview which has been affecting our evolution for at least the last 300 years. It is growing exponentially in the developed countries because the scientific and psychological development required to make serious, even radical life extension a real possibility is unfolding - exponentially.

Dagne: The philosopher, Thomas Hobbs, said, "Individuals form society so that they can make sure that their lives are not nasty, brutish and short." In other words, individuals do not exist for society. Society exists to serve individuals. Einstein said, "The only justifiable purpose of political institutions is to assure the unhindered development of the individual."

I believe, the mortalists are almost certainly mistaken. Please don't get me wrong. Many of us will die young. Some who die before their time do so in order to protect us and give the rest of us a chance to live long and free. Certainly, there is no shame in death and I personally do not believe that death is the enemy. In fact, I think of it as a potentially beautiful opportunity. But I do not worry about death taking too long to arrive. On the contrary, the last 40 years seem to have passed like a summer afternoon. So, if I live another 30 years I have no doubt the end is coming up relatively immediately. But there is also no shame in living a long, good life. How will most of us choose if we have

the option of living longer or dying younger? The stage is set. Assuming we can deal with the existential threats life spans in the developed countries will probably at least double again in this century. Furthermore, the undeveloped countries are likely to achieve tremendous political and economic progress over the coming century - becoming, at least, relatively developed countries.

I agree with Ronald Bailey, Aubrey DeGray, Ray Kurzweil, Terry Grossman and other scientific leaders and futurists who assert:

1. The benefits of anti aging treatments easily outweigh their costs.
2. They will be affordable by most people.
3. They will help solve, indeed may be necessary to eventually find remedies for our incredibly difficult social problems.

What indications are there that the benefits of longevity will outweigh its costs? Nobel Laureate for economics, Robert Fogel has pointed out that for the last 300 years humanity has embarked on what he calls techno - physio evolution. In that time we have gained more control over nature than humanity achieved in all of previous history combined. Obviously, more is coming and exponentially fast. In other words, we have joined the primal forces of nature in shaping our own evolution - for better or worse. I would join those who light one small candle rather than curse the darkness and say - our continuing to evolve is for the better in spite of some scary side trips. I believe it is possible that our worst flaws will, we hope and pray extinct themselves. After all, from an evolutionary perspective they are merely evolutionary experiments or mutations.

Humans have increased their size by more than 50% (probably more than we need to). Yale economist William Nordham calculates that increases in longevity in the West in the 20th century are responsible for 40% of Western economic growth. Why? Not only because people work longer, but they work smarter and living longer allows them to accumulate more human capital in the form of knowledge and life experience. Longer lives enable the creation and stabilizing of institutions that allow for and promote economic growth. In addition, longer lives increase planning horizons and reduce individual discount rates. What do we mean by a discount rate? Think of it as the interest rate you are willing to pay for the value of future cash flow. A dollar today is worth more to you than a dollar a year from now. Whatever that difference is, is your discount rate.

Psychological research indicates that if we expect to live longer we lower our discount rate. In other words we value our future more than those who expect their lives to be short, nasty and brutish. This means we will, for the most part, plan and work to assure a prosperous and peaceful future. Which, also adds to the quality of life in the present. Two economists at the University of Chicago, Kevin Murphy and Robert Topel, recently calculated the value of increased longevity. Even the most recent increase in the US of 5 extra years since 1970, they estimate, has increased our wealth (not just the GDP) by 3.2 trillion dollars per year for a total of 95 trillion over the past 27 years. If you calculate all of the expense that went into medical research, cleaning up the environment, etc., you wind up with a net increase of wealth of over 60 trillion just in the US over that time

period. Can you see, from an evolutionary point of view, some of the implications of only 5 years longevity since 1970? Another fascinating calculation is that a one year reduction in the mortality rate of cancer would be worth 500 billion per year. And we have tremendously decreased the mortality rate of some types of cancer already. If that calculation is projected worldwide then a cure for cancer would be worth over 50 trillion dollars.

So, can we afford these longevity treatments? The mortalists argue that they will be too expensive and too few people will be able to afford them. Without assuming exponential growth, no singularity in the near future as Kurzweil predicts, but just looking down a normal growth path let's see what economic science is projecting. By the way, I think an evolutionary singularity is possible and likely, though maybe not the way Kurzweil predicts. One writer argues that longevity treatments could bankrupt the economy because they would cost as much as 15 thousand per year - similar to AIDS treatments which are, in fact, a longevity treatment. So, if 80 million oldsters get these treatments then we have a cost of 1.2 trillion per year. That certainly gets the attention of someone living in today's 12 trillion dollar US economy.

However, in 2003 the Employment Policy Foundation projected (and other institutions and studies support their numbers) that the US economy will grow to 128 trillion by 2077. So if these numbers are correct, anti aging treatments would cost less than 1% of GDP by 2070. Lets say that we give these treatments to everyone in the US (480 mil by 2075) then the cost would be 7.2 trillion or less than 7% of GDP. If we think about all of the benefits (including economic) that come from living long healthy lives, anti aging treatments are a bargain in 2077. Some argue that the economy can't grow 7 or 8 fold in 70 years. Well, the US economy grew from less than 1 trillion to over 10 trillion from 1929 to 2000. Having a per capita income of 150 thousand in 2077 is no more amazing than where we are today would have been to our grandparents.

What will people be doing with their long lives? One of the poorly thought out arguments that the mortalists use is that Social Security, Medicare and other health care payments will bankrupt our future systems. But they fail to realize that what longevityists are working on is not how to make people older longer but rather how to allow them to stay younger longer. People will be able to work more and longer and probably will want to. Even if there were the Social Security conflict envisioned by the mortalists, it could easily be solved by allowing people to choose between their longevity treatments or Social Security. You can demand your Social Security and die statistically younger or you can keep working or live off your savings and get your longevity treatments. I think we can guess what most people might choose.

Of course, we really don't know what people will be doing with longer, healthier lives. But there are ways to think about it. For example, what are people today doing with lives that are almost twice as long as they were 100 years ago? Nobelist Robert Fogel points out that in 1875 spending for food clothing and shelter accounted for 75% of average consumption. People spent 75% of their lives getting those basic things. My

grandfather, who owned a General Store in Ridgely Missouri lived in 1900 in a world with a Gross Domestic World Product of 350 billion per year.

I found some statistics for the theUS for the year 1906. Not perfect but close enough for, as they say, government work:

In 1906 the average life expectancy was 47 y ears. Only 14 percent of the homes had a bathtub. Only 8 percent of the homes had a telephone. There were only 8,000 cars and only 144 miles of paved roads. The maximum speed limit in most cities was 10 mph. The tallest structure in the world was the Eiffel Tower ! The average wage was 22 cents per hour. The average worker made between \$200 and \$400 per year . A competent accountant could expect to earn \$2000 per year, A dentist \$2,500 per year, a veterinarian between \$1,500 and \$4,000 per year, and a mechanical engineer about \$5,000 per year. More than 95 percent of all births took place at home. Ninety percent of all doctors had no college education. Instead, they attended so-called medical schools, many of which were condemned in the press AND by the government as “substandard.” Sugar cost four cents a pound. Eggs were fourteen cents a dozen. Coffee was fifteen cents a pound. Most women only washed their hair once a month, and used Borax or egg yolks for shampoo. Canada passed a law that prohibited poor people from entering into their country for any reason.

Five leading causes of death were: 1. Pneumonia and influenza 2. Tuberculosis 3. Diarrhea 4. Heart disease 5. Stroke.

The American flag had 45 stars. The population of Las Vegas was only 30!!!! Crossword puzzles, canned beer, and ice tea hadn't been invented yet. There was no Mother's Day or Father's Day. Two out of every 10 adults couldn't read or write. Only 6 percent of all Americans had graduated from high school.

Marijuana, heroin, and morphine were all available over the counter at the local corner drugstores. Back then pharmacists said, “Heroin clears the complexion, gives buoyancy to the mind, regulates the stomach and bowels, and is, in fact, a perfect guardian of health.” Eighteen percent of households had at least one full-time servant or domestic help. There were about 230 reported murders in the US.

My Grandfather could not have imagined living in a world in which his grandson could make his living as easily and comfortably as I do. Today Fogel calculates that acquiring the same basics that took 75% of one's income takes about 12% of consumption today.

By the way, my grandfather, Richard Calhoun Crane, was about 41 when he died in 1918 during the Swine flu pandemic, because antibiotics hadn't been invented. When I was 20 my life was saved by antibiotics, again when I was 35 and once again in 1991 when I was 55 - twice from galloping (severe) pneumonia and once from TB.

One of the major reasons we have an overweight pandemic in developed countries now is because of plentiful, cheap, delicious food and work that demands little physical exertion. According to Fogel 67% of our income now is devoted to what he calls leisure. In 2040 Fogel estimates that the average household will only have to work 340 hours

per year to maintain the same level of food, clothing, shelter and leisure that we have today. A lot of time for people to spend on what we call leisure or optional goals. One of the mortalists writers says that people will be able to continue their mediocre lives without having to think about higher question's like: What is life used for? Pretty condescending isn't it? It seems likely that he feels he would be an exception.

Once again, assuming we don't blow ourselves up or get hit by a giant asteroid, etc., it seems likely that people living longer, healthier lives will work hard on solving humankind's problems because of the combination of wealth produced, their lower discount rates, better education and, I would argue, a higher quality of consciousness. Even with today's life spans, it is clear that many if not most older people, especially when healthy, care about environmental issues, poverty, lack of education, political and psychological freedom, and terrorism, etc. In fact, Bailey presented a paper to the World Future Society which argues that humanity will be restoring nature and withdrawing from the abuses of nature by the middle of this century. Indeed, the environmental movement has already been gaining momentum for decades. Investment in fixing environmental problems is exploding and it has already become a source of substantial profit in the market place.

A Rand corporation study on poverty last year projected that because a high proportion of healthy older people are working, the ratio of younger people to old people working is changing fast. The Rand study argues that actually health comes before wealth contrary to the long standing view that wealth leads to health. Of course, there is synergism in that improving one improves the other. And what about terrorism? Note that few suicide bombers are old people. Terrorism tends to be a young person's game. And if those young people had a lower discount rate, they could look forward to longer, healthier more prosperous lives, I believe terrorism as we know it today would begin to dry up. People with something to live for value their lives much more and usually the lives of others. Patience grows with age. The young are much more likely to see issues as black and white and much more ready to use violence to try and get their way. It is humorous that we have to do a study to realize that.

There is a correlation between longer life spans, scientific and technological progress and globalization. Globalization is forcing countries to cooperate more and making war far more costly because it is difficult for one country to attack another without hurting its own economy. World peace will not come immediately if we live longer but it is reasonable to assume there will be a tendency in that direction. Mortalists, it seems to me, like the Luddites are on the wrong side of evolution and history. Apparently, they fail to grasp that the effort to extend both the length and the quality of life is a perfect example of human flourishing. One of the highest expressions of human nature is to do the best we can with what we have to work with. And part of doing our best is to try to overcome limitations imposed on us by our genes, evolution and our environment. Future generations will look back with astonishment that some people at the beginning of the 21st century actually wanted to stop the evolution toward longer, healthier lives apparently to protect their distorted, pessimistic and frankly, condescending view of human nature. They will look back and thank those who worked to make their world of

longer healthier lives possible. I salute Aubrey De Gray and the tens of thousands of others who are working so hard to improve our health, stretch out our middle years and increase our life spans.

So, we have looked into some implications of substantially longer, healthier lives. In other episodes we will look at what you and I can do now to enhance the quality of our lives while simultaneously extending our lives. In fact, there is little extra to do because actions taken to improve quality of life now are the same actions required to increase lifespan. However, I think most of us are not as concerned with radically extending our lives as much as we want to improve the quality of life we have while we have it. That means enhancing consciousness and that is the intention and mission of our work.

Dagne: In order to keep these netcasts to 30 min or less, we will end now. In the next netcast we will look at two more huge crises that Nick Bostrum and other futurists including yours truly feel we must address now. 'Till then, take care of yourself.