Debates

Point-Counterpoint: Would Doubling the Human Life Span Be a Net Positive or Negative for Us Either as Individuals or as a Society?

Gregory Stock¹ and Daniel Callahan²

¹Department of Health Services, UCLA School of Public Health, Los Angeles.
²The Hastings Center, Garrison, New York.

VIEWPOINT: DR. GREGORY STOCK

The question before us is whether doubling human life span, and presumably adult life expectancies as well, would be beneficial for us as individuals or as a society. Those who believe such a development will arrive during the next generation or so are almost certainly being overly optimistic, but we will examine here not that issue, but whether the goal itself is worthwhile, because the answer has significant public policy implications. Some critics of biotechnology have argued that such a development would be undesirable and that we should therefore discourage research to achieve the insights that might allow us to meaningfully intervene in the aging process.

It may seem self-evident that extending our vital years would be desirable, but so many people have argued the contrary that it is worth looking closely at both the personal and social consequences of such a development. I will argue that the benefits would not only be personal, but social.

On the personal side, life’s larger trajectory, when looked at from afar, is a brutal one. If we live long enough, everything we love is eventually taken from us: our family, our friends, our health, our connections to the world around us—smell, taste, vision, hearing—our vitality, even our minds. Anyone who looks at this trajectory from youth towards decrepitude as idyllic should sit in a nursing home and contemplate a photo of the early years of someone who has become hunched and frail, or who is barely present at all. Who would not feel at least a twinge at this diminution?

We’ve developed many ways of trying to accept not only these ravages, but death itself. The first is to ignore this descent: We can simply pretend it isn’t happening. This works when we’re young, but becomes ever less effective as the years march by and our strength seeps from us. The second way is to deny death: we can assert that the soul is eternal, that our memory will live on, that we are not older but better. A third way is to battle the process like Ponce de Leon did slogging through Florida, Dorian Gray, or those engaged in anti-aging research because, in the backs of their minds, they hope to extend their own future. Or we can accept this descent as sad but inevitable, and say that it’s natural and can’t be avoided, or even tell ourselves that it’s the best thing and claim, like Leon Kass, the Chair of the President’s Bioethics Advisory Commission, that death gives meaning to life.

Dan Callahan, I suspect, is right in the middle of this last category, not only accepting aging, but in some ways, extolling its virtue and ultimate wisdom. I, on the other hand, see it as a sorry state of affairs. Frankly, I don’t see how you can applaud our current life expectancies and rue their extension while truly saying “yes” to life, unless you think we live in a perfect world, where everything happens to be optimal just as it is. And this is an attitude exhibited with little else. We alter the world around us all the time. We build and dam and plough. We domesticate animals and plants. We breed our pets to suit our personalities. If we think we live in a perfect world, where everything happens to be optimal just as it is, then it implies a lot of changes, the least of which is that we should perhaps be our goal. If we are going to accept that, then it implies a lot of changes, the least of which is that we should terminate much of our public health efforts and biomedical research.

Sure, at some point in our journey toward decrepitude, life can become so painful that it’s difficult to bear, and the prospects ahead so grim that death can look like a rescuer. That’s why we don’t always mourn when we see an older person die. Death is an escape at times. But the game of anti-aging medicine is to buy more youthfulness, not more decrepitude. If life shifts at some point from being a positive to being a negative, it does so not at some particular age, but as a result of the internal changes and debilities that accompany the process of life itself. And it stands to reason that delaying the arrival of those changes would delay this shift and add life that is of value to us individually. The cost of intervention might be too high, of course, but theoretically the personal cost could be brought down to very near to zero, as is the case, say for antibiotics that insulate us from infectious disease.

In my view, only at the point that someone ceases valuing life itself would he or she not see freely chosen anti-aging interventions as being a personal benefit. To reject such an intervention for oneself is one thing, but to try to deny it to others is entirely another. What about social costs, though?
Perhaps the global costs of more youth and vitality might be so high as to demand that individuals forego the obvious personal benefits of extended longevity.

Before we answer that question, let’s think about how best to measure costs or benefits. The only metric that makes sense is personal. Life extension is of value if individuals value it, and it is very valuable if individuals value it a great deal. Moreover, in our culture, people do value extended vitality and youth, because they strive for even its appearance, spending substantial sums on vitamins and anti-aging medications that accomplish little or nothing. Without this broad desire for extended youth, there would not be so many charlatans and hucksters populating this realm. So, if actual anti-aging interventions come into being, we will forego them only in the face of very serious social costs.

In looking at the social costs of anti-aging medicine, we should consider interventions that are freely available and easily accessible not only because these would be the most challenging socially, but because it is so easy to distort the distribution of even a great good and worry about issues of equity and justice that have little to do with the nature of the good itself. To try to weigh costs and benefits, I could list the advantages I see in doubling the span of our vital healthy lives: Such an intervention would give us a chance to recover from our mistakes, lead us towards longer-term thinking, and reduce healthcare costs by delaying the onset of expensive diseases of aging. It would also raise productivity by adding to our prime years. It takes a long time to acquire the knowledge and experience to operate effectively in the increasingly complex world we live in, and just as we achieve this we begin to slow down. So, adding to our prime years would be of tremendous benefit now, just as it has been in the past. Yale economist William Nordhous, for example, claims that the dramatic increase in human life expectancy since 1900 has been responsible for about half the increase in our standard of living in the United States since then.

In any event, I could wave my hands and assert that these sorts of benefits outweigh the various social challenges that would come from changed patterns of wealth transfer, changed family dynamics, added rigidities from reduced intergenerational turnover, and the need for people to come up with new life plans that encompass these unprecedented extra decades. I could minimize the challenges of getting rid of dictators and even the aging tenured professors that academics always seem to worry about. I could assert that change always brings challenges, and that our projections about the impacts of something as monumental as doubling the human life span and adult life expectancy tells us more about our own values and beliefs than it tells us about what would really happen. I could insist that Dan Callahan had better have some very clear and dire social dangers in mind if he wants to use their avoidance as justification for sacrificing decades of life for so many who value it deeply.

But I think the real issue is not how we tote up the specific debits and credits we see, but how we judge what to call a debit or a credit. As I see it, the value of a development to society at large is ultimately the sum of the value it generates for each individual in that society. Thus, if on average we benefit as individuals, then society will enjoy a net benefit. In some situations, of course, the supposed individual benefits are a mirage. The so-called Tragedy of the Commons, for example, occurs when an apparent individual benefit evaporates or is short-lived if pursued by everyone. This happens when the supply of what is sought is limited so that everyone can’t possibly have it, or when something that is sought is valued primarily because it shifts one’s relative status in society and thus is no longer of value when possessed by all.

Anti-aging medicine is afflicted by neither of these attributes. In fact, the more aggressively it is pursued by more people, the more likely it is to arrive more rapidly and to end up being cheaper and more readily available to more people, even those who did not pursue it in the first place. In addition, the more people there are enjoying extended longevity, the more we ourselves would enjoy it. Many people claim that they don’t want to live a longer life because they’d grow increasingly isolated as their friends and family aged and passed away. So, the access of others to such a medical intervention would increase, not decrease, its value to us. The circle is virtuous.

The public policy implication of this is that we should not only allow anti-aging research, we should pursue it aggressively to gain both the individual and the social benefits that would attend progress. And if we believe that eventual success is likely—whether in decades, generations, or centuries—spending healthcare resources in its pursuit is a gift to future generations because such effort makes it more likely that they will be among the first to enjoy these benefits, rather than among the last—as we may be—to miss them.

I will go even further. To spend resources on our current healthcare needs, instead of on these future possibilities, is highly suspect if to do so we incur, as is now the case, deficits that will have to be paid by future generations. To sum up, anti-aging interventions are clearly of value to many individuals. They express this clearly in their behavior. Anti-aging interventions are clearly advantageous to society as measured by the very assessment of its members. And as a consequence, we should be virtually compelled to pursue anti-aging medicine as aggressively as we possibly can.

**Viewpoint: Dr. Daniel Callahan**

One of the advantages of getting older, and pursuing these issues, is that I have more time to argue with people whom I think are quite wrong about this. I will try to show you why I think Dr. Stock is going down a bad road here. Let me begin by saying that I am 73, and one of the interesting things about these issues is that it’s my life I’m thinking about. I also spend time with a lot of people my age and older. I look at them and observe the trajectories of their lives, and I try to see how that is turning out. We have obviously greatly increased average life expectancy, particularly for those people over the age of 65, and it’s continuing to improve. So we have, before our eyes, some of the results of extended life spans. We can see what happens to people who are still in good health, still vigorous, and can see how their lives turn out and how satisfied they are with
their lives. For me, that is kind of a natural experiment with my own life while also observing my peers.

Let me begin by suggesting four different models of longevity and give you a sense of the one I think makes the most sense. One I will call “The Natural Progress Model.”

By that, I mean simply that we continue doing what we are now doing, trying to understand and improve the aging process. I’m not against anti-aging research. I’m in favor of improving the quality of research and the quality of aging research and the quality of life of elderly people, but not deliberately trying to extend life. We should simply take as a byproduct whatever extension comes as a result of trying to improve quality. I think one demographer said there has been an average gain of about 3 months a year for 160 years now, in average life expectancy, and I suspect that will continue to go on. I think that’s perfectly fine, and that it will come about by improving the social and economic living conditions of people, by better preventive care, and also by better clinical medicine in later years. That’s one model.

The second I call, “The Normalizing Model.” That is to say we could really work hard to reduce premature death, and aim to cluster everyone around the age of 85, which is the age Japanese women on average now reach. If we got everyone clustered closer to the average of 85 years, this would be a pretty decent life, a life long enough to do most of the things you can do in life.

A third model I call “The Optimalizing Model.” There was the famous French woman who lived to be 122. We could try to get everybody clustered around that age. We know that such a long life is biologically possible. It has happened. And there are, of course, more people these days living to 105, 110, and 114, and that is not a crazy goal either.

Then there is what I call “The Maximizing Model,” which is to say, attempting to double life expectancy.

I believe in the natural progress model. I think we are doing fine now. People are living longer, and we are going to make great improvements. Life will be better for elderly people in the future, but I see nothing whatever to be gained by deliberately attempting to double life expectancy. My stance is very much a social stance. It seems to me irrelevant that a lot of people would like it. A lot of people like a lot of things that are bad for the collective good of the rest of us. The fact that many of us want to live longer says nothing about whether, a) it will be good for us as individuals to live much longer, and b) whether we are going to get a better society. We can see some bad results of people trying to pursue their individual welfare, and arguing, as does Dr. Stock, that if everybody gets what they want individually, we will collectively be better off. That is a great fallacy, reminiscent of the old Adam Smith “invisible hand” argument, that we will get a good society by satisfying everybody’s individual desires. I think that is a false notion of the way society works and our collective lives work.

Let me raise three basic problems that I think have to be addressed if we are going to talk about radically extending life.

First of all, consider all of our present problems in our world, in our national and global community: problems of war, poverty, environment, job creation, and social and familial violence, for instance. Are there any of those problems that would be solved by everyone living a much longer life? I don’t think so. I can’t imagine it’s going to help the environment very much. It’s certainly not going to automatically deal with social and family violence, it will not do away with the problem of war, will not do away with the problem of poverty and violence. One question then is to ask, “Will it solve any of our current problems?” I can’t think of any.

Secondly, what new social benefits would a much longer life expectancy confer on our society? Dr. Stock romanticizes about these new possibilities. Maybe it will happen, maybe it won’t, who knows? Anybody can have sweet and lovely dreams about the future. But I think one has to ask the much tougher questions, and not just speculate, not assume we’ll find ways to adjust, and that it will all turn out beautifully. We don’t know that at all. Will we get new wisdom? One of the advantages of getting to being my age, and living with people my age, is that I don’t think people my age do have any greater wisdom. If we have greater wisdom, then I’m right and Dr. Stock, my junior, is wrong. I haven’t gotten any wiser between 50 and 73. I was probably wiser at 50 than I am now. And most of the people I live with who are my age or older don’t seem to be a bit wiser. If I want to talk about interesting things, I look for vitality and drive—I go to young people. One bit of advice my mother gave me in her old age was, “Cultivate young friends. Don’t hang around people who are old.” She was absolutely right about that.

Do I see new energy? I live around some people who are very sick. But mainly I live among affluent, elderly people between the ages of 70 and 95. They are in good health, they have money, and they can take nice cruises or just putter about. They go to Scottsdale and play golf. But they don’t seem to have any new energy, and they sure don’t have any new serious initiatives. The number of people at this meeting—how many people are over 70 here? Not many. All of us over 70 know how rare it is to find many of “our kind” at meetings, looking at new things. Most of the older people have dropped out. They fade out. I don’t believe that if you give most people longer lives, even in better health, they are going to find new opportunities and new initiatives. They will want to come and play more golf maybe, but they aren’t going to contribute lots of brand new ideas, at least those I know.

But the hardest question is, “How would we restructure society to deal with people who live to that age?” I think that question has to be looked at in a realistic way. We know it would change the structure of job opportunities, and of job mobility. We know it would change the ratio of young and old, and if you are going to look at the question of extending life expectancy, you are going to have to look at the whole “problem” of child bearing and child rearing. Those two go together. What’s going to happen to it in such a society? Leaving aside questions of equitable distribution, if we have very different ideas about living much longer lives, how are we going to design a social security system? What will we do with Medicare where people have different desires for different length of time? A lot of people these days are in pretty good health because of expensive drugs and the like. Is Medicare going to support that indefinitely? I think we will have a lot of problems.
All I want to say is that it is not enough to speculate in a romantic way about the benefits without speculating equally about the potential downside. Each one of the problems I mentioned has to be solved in advance. The dumbest thing for us to do would be to wander into this new world and say, “We’ll deal with the problems as they come along.” I don’t think that would work. A doubling of life expectancy would fundamentally change society. If this could ever happen, then we’d better ask what kind of society we want to get. We had better not go anywhere near it until we have figured those problems out.

The problem can’t be solved by looking at what individuals might like. I suggested at the beginning that what individuals like is not a good predictor of what is going to be good for society. I would also mention, from my own life experience, that I don’t see any correlation between length of life and satisfaction with life. Certainly, one doesn’t want to die prematurely, but beyond that, it seems to me that living a decent life—assuming one hasn’t died as a child, or in middle age as an adult—really has nothing to do with the length of life. It’s how you live your life and the kind of goals you set for yourself. The length per se is not a fundamental value.

It is also interesting, as one gets older, that those over 70 so often say, “My God, how fast it all went. I can’t believe I’m this old now. Where did those years go?” I think people 150 or 160 will say, “My God, where did all those years go?” Of course, if we double life expectancy, and we get everybody up to 150 or 180 years, and if it was really terrific, then they will want more. They will say, “Why should we stop now? It’s been wonderful. Let’s keep going.” We would have an infinite treadmill of more and more and that would increase the social problems enormously.

**DISCUSSION**

**Dr. Stock:** I don’t know quite where to begin. For starters, you seem to feel that we need to solve all the problems in advance before we can embark on a path with such profound social implications. By your logic, which is essentially that of the precautionary principle, we should have stopped medicine in the 1900s or at any time before, since the progress that made possible the extension of life expectancy from around 45 years then to 75 years today, not only couldn’t have been shown in advance to be benign, it has contributed to problems from population growth to dramatic shifts in family dynamics and the role of women. By your logic, we wouldn’t want birth control; we wouldn’t want telephones, computers, or any new technologies. We wouldn’t want to do anything that has profound effects because there is no way we can solve the problems in advance.

**Dr. Callahan:** Would I have said the same thing 100 years ago? Absolutely not. But we have now had 100 years of technology to draw upon. We have some knowledge of what it means to society to have people live much longer lives. We have a sense of what it means to our social security system. We know what it means for the provision of healthcare. We know something about what it means for living a family life. We are not ignorant. I don’t think we could work it out perfectly, but we could get a pretty good sense of likely possibilities based on our present experience. For instance, I’ve become interested in universities: What happens now in universities that don’t have mandatory retirement? First of all, some people stay beyond age 70, between 5% and 10% in the universities I’ve looked at. One consequence is that they are often not very good teachers any longer. They don’t work hard. They know how to avoid the committee assignments; they are really skilled at that. Most importantly, they block the entry of young people onto the faculty. I have three good case examples where they have the data to show that this has happened.

**Dr. Stock:** The problem with your logic is that you are assuming that people are aging, that they are getting older, and their faculties are diminishing. But you can’t use such an example as a way of attacking the possibility of extending our vitality rather than our decrepitude.

**Dr. Callahan:** No, no, I’m not saying their faculties are diminished. They simply don’t have their earlier energy or interest. Why do we assume that this is all going to radically change by virtue of anti-aging research?

**Dr. Stock:** I think that if you were now, physically and mentally, what you were at 40 or 50, your attitudes might be somewhat different about what it’s like to be a 73 year old. You even said, “I don’t want to die prematurely” and yet...
Dr. Callahan: Here’s my definition of prematurity, that of not dying before one has lived a life that is long enough to allow one to do most, though not necessarily all, the things that life enables one to do. In any case, by the time I’d reached 65, I’d raised a family, I’d had a career, I’d written a lot of books, I’d given hundreds of lectures, and I’d had lots of friends. I had not been to Nepal, and could always imagine new things I’d like to do. But I said “most of the things.” You don’t have to live to be 100 to do that.

Dr. Stock: It’s astonishing to me that you could believe that you have already done most of what life allows one to do. You have an imagination. Can you not see huge realms of life that remain...

Dr. Callahan: I sure can’t. All I can do is keep writing more of those books, and that’s getting a bit repetitious now. I don’t see anyone else doing it either at my age. Not just me. I’m looking at my age.

Dr. Stock: There are many people who, at a later age, do not feel they have exhausted what life has to offer.

Dr. Callahan: They want to play golf in Scottsdale. That’s true. Somebody once said to me, “What about the people who like to sit on the back porch and watch the sunset?” OK, you can do that indefinitely. If that’s their life, then fine. I give in.

Dr. Stock: To another point. You said a problem with extending longevity is that it wouldn’t solve any of the major problems of the world. But why should that be a requirement? There are many things going on in society that we accept even though they aren’t oriented towards solving big problems. And many people would say the decay we face with aging and decrepitude is a big problem that they’d like to solve or at least postpone. And effective anti-aging medicine would certainly help with that.

Dr. Callahan: It seems to me that radically extended life expectancy would radically change the social structure of society. Therefore, if you are going to make that kind of change, particularly just to satisfy individual desires to live longer, then I want to say, “Is this going to help the rest of us with all of our other problems?” Don’t change the whole society unless you can show it is going to solve some present problems. That seems to me to be a simple proposition.

Dr. Stock: Society is going to undergo profound change whether we extend the human life span or not, considering advances like telecommunications, computers, the Internet, and all the other things that are radically changing society. Birth control is an obvious example of something with dramatic impacts. Society is undergoing profound change and will continue to do so. We can’t hope to keep it as it is.

Dr. Callahan: But then the question is: At what point do we want to stop some of the profound changes? One of the changes I have been fascinated with is that we are getting more and more automobiles in this world. We need a real birth control pill for automobiles. I have written a paper comparing medical technology to automobiles and had a lot of fun doing it because, on the one hand, we don’t seem to be able to control the cost of that medical technology, and yet we can’t give it up either. On the other hand, we don’t know how to count the ever-rising number of automobiles either, creating all kinds of environmental and social problems, but we can’t give up cars either. Ought we to have more and more cars just because individuals want more and more?

Dr. Stock: You can argue that there are negative externalities for certain kinds of activity. But you haven’t made a good case that there is a negative externality for longer life. You asked, “What is good for society? If individuals gain what they want, then why isn’t that necessarily good for society?” And it makes me wonder who in your view is actually going to decide what is good for society? Clearly, you have some very clear ideas, which you say are in opposition to what many people believe, because if they get more life they will just want even more.

Dr. Callahan: I’ll give you an example. A lot of people don’t like to be taxed, and a lot of people particularly don’t like high taxes. Yet we have decided, for the good of society, that we need taxes to pay for Social Security and Medicare, and to run our police departments, and everything else. We thwart a lot of individual desires by having a system of taxation. But to run a society, you have to both say no to people and to require people to do what they don’t want to do. There are some higher goods than what we personally want. We set speed limits. We say you can’t drive 90 miles an hour down the street even though you want to, because you may hurt other people.

Dr. Stock: So you are saying, that if a majority said, “Here is an anti-aging medicine, but it would be bad for society and we shouldn’t take it,” then this would be something we should ban.

Dr. Callahan: If you have a majority in favor of something, then you could have a tyranny of the majority. They might win. I’d lose the battle. I hope there will never be a majority in favor of a doubled life expectancy.

Dr. Stock: When you spoke about taxation, weren’t you talking about majority decisions? Weren’t you saying the political process is what should decide what is best for society?

Dr. Callahan: We ought to decide politically, but I would prefer to spend a lot of money on distributing AIDS drugs than spending money on anti-aging research. Is that a bad priority on my part? Millions of people are dying of AIDS.

Dr. Stock: Why do you have a problem with those deaths, considering it’s a pretty natural path...

Dr. Callahan: No, it’s not. AIDS leads to a premature death, the death of people at a young age, and affects people who are responsible for the infrastructure of society. AIDS is a terrible disease, and ought to be cured. I don’t think cancer in people at 95 needs to be cured. It’s as simple as that.

Dr. Stock: Are you suggesting that there should be some age threshold above which you don’t treat a person, independent of what their level of vitality is?

Dr. Callahan: That’s a question of how much you want to spend on Medicare. How much do you want to invest in high technology medicine to keep elderly people alive?
That’s going to be a problem in future years with our Medicare system. I think you will agree we are going to have to make some terrible decisions. Right now there are a lot of new heart technologies coming along, most of them very expensive, and Medicare is struggling right now to decide whether or not to provide reimbursement for them.

**Dr. Stock:** How to allocate public resources is a large issue, and one can make lots of arguments about how best to spend money to best serve society as a whole. But would you argue that if the possibility emerges to extend human life span and prolong our years of vitality significantly there should be some sort of prohibition to stop all those who you yourself would acknowledge are going to want it?

**Dr. Callahan:** I would not want to prohibit the research. I want to stigmatize it. I want to make it look like you are being an utterly irresponsible citizen if you would sort of dump this radical life extension on the rest of us, as if you expect your friends and neighbors to pay for your Social Security at age 125, your Medicare at 145. I want to make it look like one of the worst things you could do to your neighbor. That’s all. I wouldn’t prohibit it.

**Dr. Stock:** But how can you imagine it would be stigmatized if the vast majority of people would do virtually anything to have it and if it’s already something that people seek... 

**Dr. Callahan:** I would lose. I probably won’t succeed in stigmatizing it, but it is worth a try.

**Acknowledgments**


Dr. Gregory Stock (http://research.mednet.ucla.edu/pmts/Stock.htm) directs the Program on Medicine, Technology and Society at UCLA’s School of Public Health and is the CEO of Signum Biosciences, which is developing preventives for Alzheimer’s. He recently wrote *Redesigning Humans: Our Inevitable Genetic Future*, and regularly discusses and writes about the larger implications of new technology in the life sciences.

Dr. Daniel Callahan is the cofounder of The Hastings Center in Garrison, New York, and was its Director and President from 1969 to 1996. He is presently Director of its International Programs and a Senior Fellow at the Harvard Medical School. He is the author of 36 books, including *What Price Better Health: Hazards of the Research Imperative* (University of California Press).

Address correspondence to Dr. Gregory Stock, Department of Health Services, UCLA School of Public Health, Los Angeles, CA 90024. E-mail: gstock@ess.ucla.edu or Dr. Daniel Callahan, The Hastings Center, 21 Malcolm Gordon Rd., Garrison, NY 10524-5555. E-mail: callahand@thehastingscenter.org