

Something to Think About



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This week, I was surfing the web, and stumbled across an article which delved into something called “DNA damage theory of aging.” How does that sound for dry? However, it wasn’t; in fact, I was engrossed.

Let me give you the Wikipedia definition of the theory, and the address for the scientific paper from which it came:

The DNA damage theory of aging proposes that aging is a consequence of unrepaired accumulation of naturally occurring DNA damages. Damage in this context is a DNA alteration that has an abnormal structure. Although both mitochondrial and nuclear DNA damage can contribute to aging, nuclear DNA is the main subject of this analysis. Nuclear DNA damage can contribute to aging either indirectly (by increasing apoptosis or cellular senescence) or directly (by increasing cell dysfunction).

In humans and other mammals, DNA damage occurs frequently and DNA repair processes have evolved to compensate. In estimates made for mice, on average approximately 1,500 to 7,000 DNA lesions occur per hour in each mouse cell, or about 36,000 to 160,000 per cell per day (Vilenchik & Knudson 2000). In any cell some DNA damage may remain despite the action of repair processes. The accumulation of unrepaired DNA damage is more prevalent in certain types of cells, particularly in non-replicating or slowly replicating cells, such as cells in the brain, skeletal and cardiac muscle.

http://www.benbest.com/lifeext/Nuclear_DNA_in_Aging.pdf

Okay, the paper itself is a struggle, but the theory is awesome. Our DNA is under constant attack from a variety of factors. When we are young, it is pretty to easy to repair our DNA, but as we age we start putting repairs on top of repairs, and so on. Over time, that weakens the DNA itself, which ultimately slows down or stops its particular function as a result. At least that is how I interpret things, but I am not a scientist. It seems to make sense though; the human body is a machine of sorts, and you can repair some machines up to a point.

This got me to thinking: well, if this theory is accurate, how can we facilitate the repair of our DNA without causing underlying structural damage? Better yet, what can we do to slow down the damage to the DNA in the first place? That is just what scientists want to know, and are testing on invertebrates and lower-end vertebrates as I type. The latter is a polite way of saying rats and mice.

Unfortunately, it appears caloric reduction seems to be a leading theory right now, as excess weight and unnecessary energy within the system actually seem to weigh on DNA, pun intended. But I don’t like that, and the scientists are hard at work looking for other so-

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In really, really good science fiction, the line between the science and the fiction is blurry.

Damon Lindelof

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lutions.

This has a point: this, right here, if we can delay, retard or even stop the aging process, what does that mean to how we conduct our lives and conduct business? Think about it; this IS the game changer. What if we could slow the standard aging process to a point people are as productive into their 90s and 100s as they were in their 30s and 40s? That may seem extreme, but so did breaking down the DNA strand to a degree as to even have such a theory a few decades ago, if that. Heck, it was only 61 years ago when Watson and Crick even deduced the double helix structure of DNA itself; Watson is still alive.

Further, in 1968, the year of my birth, the average life expectancy for an American male was around 66.5 years. Since that time, the average life expectancy for American males has increased to about 77.4. Of course, we have cut down on childhood illnesses, and all of that. However, if you had told someone in 1913 the average American could reasonably expect to live to 80 by 2013, you know, they probably wouldn't have believed. Some? Sure, that is the way it has always been. The average person? No way.

As technology improves, there is no reason to believe some scientist somewhere won't devise some sort of molecular level equivalent of Scotchguard or Rustoleum to protect our precious DNA. I would imagine our bodies already create something like this, but how do we get them to create even more as we age? When they delve deeper, and they will whether they think it or not, will scientists find proverbial On/Off switches which dictate how each gene responds to various stimuli? Will 'we' be able to force the switch On when we need to do so in order to repair and/or regenerate our DNA and cell structures? Can they flip this switch to turn non or slowly replicating cells into replicating cells? Can they speed things up when need be?

The mind boggles at the possibilities, and if I can dream them up, there are plenty of folks much brighter than I at such things already hard at work on them.

But, again, what if we could slow the standard aging process to a point people are as productive into their 90s and 100s as they were in their 30s and 40s? That is beyond awesome, in so many ways. From a purely economic standpoint, you will a much larger workforce of experienced, skilled, and energetic workers. Can you imagine that? Cram 40-50 years worth of work experience into a 30 year old body? I mean, the productivity surge is going to be absolutely enormous, and I am only scared I will not live long enough to see it.

IF you have a hard time buying into this, then you might have an even harder time finding out scientists have turned lead into gold, while bismuth actually. The thought process is simple: gold has an atomic number of 79; lead is 82, and bismuth 83. Using nuclear physics (energy really), Glenn Seaborg was able to remove a combination of 4 protons and neutrons to transmute bismuth into gold. The best part? This happened in 1980, and most people don't know about it. Why? Because it amazingly economically inefficient to do such a thing. Besides, what would be the end result if we turned a bunch of bismuth and lead into gold? That's right, gold wouldn't be worth as much, making it economically dubious to do such a thing. So, the more efficient we become in turning other elements into gold, the least economically expedient it becomes to do such a thing. Ah...life's little tricks, huh?

The point is this: it will be economically feasible to extend human productivity, in years, in the not so distant future. This will have an enormous impact on our economic output and quality of life, and will be one of the greatest sources of wealth generation since the dawn of man. Once it becomes more apparent, we, if I am still around, will examine every angle to exploit it for our clients.

As for this week....

The big driver for the week was an FOMC (read Federal Reserve) meeting. When all was said and done, and the coffee cups removed from the table, the voting members of the committee voted to keep things essentially as they are. Oh, sure, the statement read the Fed would purchase \$5 billion less of agency and US Treasury se-

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curities in July than originally telegraphed, but the market shrugged it off. So what? The central bank is only going to create \$35 billion out of thin air in July, as opposed to \$45 billion in May and June. If that type of reduction in additional money printing is going to slow down a \$17 trillion economy, you know what, so be it! As for interest rates, the FOMC didn't and doesn't see any real need to do anything there. After all, 1Q 2014 GDP was in red territory, or has been reported as such, and the official CPI (Consumer Price Index) has been trailing at 2.1% over the last 12 months.

Hmm....slow to no growth, and an official inflation gauge below the historical average for inflation. Now, let me see a show of hands: who here at this table (FOMC) thinks we need to dramatically tighten monetary policy, and therefore the access to credit, in such an economic environment? I will spare you the suspense; no one raised their hand.

You know, I will go out on a limb, it is a small one by the way, and say Janet Yellen and the rest of the FOMC members are not in any hurry to make drastic changes to monetary policy. I mean they want to avoid having to do so like the plague. So, on that end, the markets really don't have much to worry about. Couple that with a shrinking Federal budget deficit, yes you read that right, and the slowdown in additional quantitative easing shouldn't have as dramatic an impact on long-term rates as previously feared.

In so many ways, this meeting was a breeze for Fed governors, and the markets have responded nicely as a result. The only thing I wonder is: what did they do with all their time at the meeting, as they could have wrapped things up not a half hour into it, for all intents and purposes. I suppose some of the regional folks got to make presentations, and I am certain more than a couple of people expounding on foregone conclusions. However, where the rubber meets the road, the Fed is on the side for now and tomorrow and the next day and the day after that....

COH at \$34? That is getting kind of interesting, but not overly compelling yet. We haven't had a position in discretionary stocks in seemingly forever, but this one in particular has hit the proverbial radar. IF it gets to \$30 or lower, we might just have to hold our nose and jump in the pool. If the first part of this piece didn't seem like so much science fiction, this should.

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