Imagination and Demand

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Editor's note: In this issue, I introduce, perhaps belatedly, the policy of occasionally inviting others to write the editorial. This issue's invitee is a volunteer for SENS Foundation, the U.S. charity of which I am chief science officer.

— Aubrey D.N.J. de Grey

To understand the communication challenges ahead, one must first understand how completely absent biomedical rejuvenation is from the wildest dreams of the general population.

Looking back over the short history of Strategies for Engineered Negligible Senescence (SENS) advocacy, I find it ironic that some very early critics dismissed this journal’s long-term predictions as “science fiction.” Unlike this journal, modern science fiction has a rather bleak view on the future of biomedicine. Reviewing the history of 20th century sci-fi movies and novels, one would identify remarkably few imaginary futures that have a scientific fix for senescence. This is odd, considering that rejuvenation, like teleportation, is an idea quite accessible to the creative imagination.

At about the time of the launch of Star Trek: The Next Generation, a recurring discussion among fans was why a bald Patrick Stewart had been cast in the role of Captain Picard. Surely, in the 24th century—an age of interstellar travel, real artificial intelligence (AI), teleportation, alien technology, and super-advanced medicine—male pattern baldness would have been overcome? This matter was put to the show’s producers at a press conference. It turned out the writers had already thought of this. “In the 24th century, nobody will care” was the reply.

Conspicuously absent from this discussion was the suggestion that a grey-haired Patrick Stewart might have looked just as anachronistic as a bald one. Why would baldness be reversed, but not other aspects of aging? Why draw the line at baldness? Why was the possibility of rejuvenation so invisible that its absence didn’t even require an excuse?

Is this what Hollywood thought of biomedicine? Hundreds of years from now, the other sciences are cloning dinosaurs and teleporiting Vulcans, while all biomedicine has done is grow a little hair? For some reason, the notion of overall human rejuvenation failed to present itself, even in a context where it ought to be unavoidable.

That was the early 1990s. Has science fiction moved on? Hardly. Rejuvenation didn’t even get the usual cautionary tale from the late Michael Crichton, which even killer nano-swarms got. In this year’s reboot of Star Trek, aging seems to be the only problem left unconquered by science. To find the concept of rejuvenation explored extensively in mainstream fiction, one needs to look beyond science fiction and into the realm of fantasy (Benjamin Button, The Fountain, Stardust, 17 Again, and some elements of vampire fiction). This only goes to show that, to the general population, senescence is a mere ghost of an idea: Something to be exorcised rather than addressed scientifically.

The interesting thing about this neglect of rejuvenation in science fiction is that it is not explicable in terms of what Aubrey de Grey calls the “pro-aging trance,” the cycle of psychological resistance to the serious prospect of real anti-aging medicine that he summarized as the simultaneous holding of the following views:

Position 1: “I refuse to think seriously about whether defeating aging is feasible, because it is clearly not desirable.”

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In science fiction, there is no real obligation to think seriously about desirability. Dystopia, after all, is a staple of the genre. Nor is there much obligation to think about feasibility, as sci-fi routinely skips the details that make a technology unobtainable. And yet, major sci-fi authors are almost silent on the theme of rejuvenation. This failure of the imagination cannot be blamed solely on the trance. There is something else going on here. Some kind of intellectual blind spot. This blind spot is common to almost everyone, not just science fiction writers; but science fiction is an important example because it reflects a society’s vaguest notions about what’s ultimately doable.

I believe that this deficit in mainstream science fiction has something to do with a particular layer of the human imagination. I don’t want to give this layer a name, for fear of appearing pseudo-psychological. But an example or two may be needed to identify it.
Consider that, until the 1990s, it was still quite common to refer to a dishonest person as a “congenital liar,” or to say “he’s a liar; it’s in his blood.” In the early 1990s, the release of *Jurassic Park*, media coverage of the O.J. Simpson trial, and various other media, expounded to the public the role of DNA. There was a rapid popularization of genetics and genetic jargon. It became more normal to say something like “He’s a liar; it’s genetic.” The emphasis shifted from blood and womb to genes and genome. Journalistic metaphors such as “Channel Four’s DNA,” “the English cultural genome,” or “political gene pool” would have been considered bad writing until about 1993. Yet, the U.K. Prime Minister Gordon Brown recently remarked, at his own party’s conference, that “fairness is in our DNA,” referring to the party’s own nature. That’s a pretty big change in the mainstream idea of the essence of a person or group. It’s as if each of us has an acetate sheet in our minds, illustrating some silly notions like “dishonest blood” and “political party genome,” which we then project onto the world, like a changing political map projected onto a constant physical map. It is this plane of cognitive understanding that I want to address.

This foggy area of the mind is the main battlefield for the public understanding of science. For example, in the tedious battle for the public understanding of evolution, support for Intelligent Design—besides being religiously motivated—is sustained by the infeasible assumption that evolution must be uphillish. This faint notion is superimposed onto the scientific theory of evolution. The stated points of dispute, such as “irreducible complexity,” are manifestations of the subliminal notion that evolution must ascend some kind of awkward slope, like a salmon swimming upstream. Conversely, an evolutionary biologist is, if anything, more likely to view the course of evolution as like a stream of water meandering downhill, filling the shape of its environment, branching off—finding a workable route gracefully, efficiently, and automatically.10

These subtleties in the way the public thinks about science sometimes influence democratic demand for scientific endeavors, just as a political map influences the democratic demand for war. Take, for example, cancer. The public does not know precisely what cancer is, but they do have a good, wordless notion of what cancer is. Cancer, in the public imagination, is a sort of lump, which we can hopefully either excise or somehow restrict. Imagining the problem in a concrete, vivid way gives us a sense of empowerment. The mundanity of this image allows the public to feel that cancer is the kind of thing that, in the fullness of time, will be defeated. No matter what cancer throws at us, nobody believes in their heart of hearts that a fleshy lump can win against our most powerful weapons. That’s partly why there still exists a democratic demand for anticancer research despite some valid reasons for despair that are well grounded in the science itself. The demand is, in effect: “We the people demand to have our tumors shrunk, cut out, or prevented.”

If cancer is a lump, then aging, in those same impressionistic terms, is what? To demand a solution to the problem of aging means demanding we do what? Should we add something? Subtract something? Straighten something out? Certainly it has something to do with wrinkles, weakness, greying, ugliness, and death, but if one probes the average person any further on what unites these things, all one finds is a hole in the mind. It is not as if the public is more ignorant about aging than it is about cancer. Real scientific knowledge is equally rare on both counts. The difference is that the general public has no mental model of aging as something that medicine can get its hands on, as it has with cancer. The idea has substance but no form. Aging: You can’t excise it, you can’t shrink it, you can’t put ointment on it … as I said, it’s a ghost of an idea.11

As if that weren’t bad enough, aging has a deeply entrenched reputation for being unstoppable, intangible, and somewhat illusory. This is the precise same set of properties that time itself is supposed to possess. I find it hard to believe that this is a coincidence, or that this fusion of concepts is not reinforced by the double meanings of the word “aging” and all its Indo-European equivalents (aldring, vieillissement, envejecimiento, etc.) to refer to both senescence and loss of newness. After all, do not phrases such as “black culture” reinforce a gut feeling that race and culture are one thing? Is something similar happening here, with senescence and time? If, as I said, the idea of aging is a “hole in the mind,” then the idea of time is also a hole in the mind.12 I suspect they are one and the same hole.

With no basic, sci-fi understanding of senescence, how can the public know what kind of scientific advance to even hope for? No matter how thirsty a population gets, they will not demand a water supply if they do not first understand the concept of liquid, or the concept of dryness. Nor will they bother to ask their government to “rid us of this thirst!”, without some rudimentary idea of what form that riddance could take. They will slowly let themselves wither away, assuming their thirst to be some kind of intractable, cosmic, eternal verity. Is this not the kind of reticence we see in the public with regard to aging? Thirst but no resolve? The secret thirst for a solution is not enough. Neither democracy nor the market works that way. There needs to be a thirst for a kind of solution.13,14

Before there can be any widespread popular support for a “war on aging,” there would need to exist a lay conceptualization of aging that suggests an appropriate solution as automatically as “dehydration” suggests “drink,” “cancer” suggests “cut it out,” or “spider” suggests “get it off me.” Some radical life extensionists like to address this challenge by declaring aging to be a “disease,” but this description does not emphasize the physicality of the problem. It is mainly a way of saying we don’t like it, and it also comes dangerously near to the mode of rhetoric in which it is said that homosexuality or swearing are diseases.

The SENS approach is to address agedness as a state, and not aging as a process.15 To refrain from meddling with metabolic processes (of which we lack a target version), and instead restore body tissue to its former state (a target state which can be observed freely in young adults). This approach is being applied in SENS-based projects such as Nason Schoeller’s laser ablation of lipofuscin at the SENS Foundation Research Center, a modification of a technology already used to remove age spots. This is not “curing” senescence. This is ridding the flesh of senescence.

With this approach in mind, perhaps the best we could hope for—in terms of popular understanding—would be if aging were understood to be something more like a wound than like a disease. A tissue injury inflicted from within—scalding, by the inner furnace of metabolism. This is tech-
nically wrong, of course, like the idea of a whale as a fish, or DNA as a blueprint. But it is better than nothing. It occupies a middle ground between a scientific view of aging and complete blankness of the imagination.

Furthermore, when aging is envisioned in this way, the SENS approach presents itself automatically. One cannot think of tissue injury without also thinking of “tissue repair” and, some day, perhaps “regenerative medicine.” If we’re lucky, maybe progress in the coming decade will be so impressive that none of this will matter, and the reality will precede the fantasy. But for as long as that is not the case, a sensitivity to the form senescence takes in the public imagination is paramount.

References


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