

# The Last Mortals

*To be immortal is commonplace; except for man, all creatures are immortal, for they are ignorant of death. – Jorge Luis Borges*

You will die. So will your children and your grandchildren. But what about your great-great-grandchildren? It seems increasingly likely that a not-too-distant human generation will witness medical science's conquest of biological illness and aging itself. They will face no practical limit to their lifespan. They will be the first immortals. But they are not the focus of this essay. I am interested in their immediate predecessors: the final few human generations to face certain death. How will their understanding of the harm of death, and the value of life, be affected by seeing the horizon of immortality come within reach, knowing they have fallen just barely short? These answers matter, because it may turn out that we are the last mortals.

Perhaps this sounds like science fiction, but we should take it seriously. Medicine has already upended commonsense about the 'normal' lifespan. An average American born in 1900 could expect to live only 47 years. If that American did make it to 1950, they saw babies born with a life expectancy of 68 years – a 45% lengthening of life in only two generations. And that baby born in 1950 is probably still around today, to witness newborns who can reasonably expect to reach age 80. The UK Office for National Statistics has predicted that female Britons will have an at-birth life expectancy of 100 years by 2057. So if you are currently under age 40, then you can plan to meet young people who will live to see 2157.

These ever-growing lifespans are the result of regular advances in medical science. In 1900 the three leading causes of death in the United States were pneumonia/flu, tuberculosis, and diarrhea. Only a century and a bit on, many of the major acute illnesses are tractable. Every month brings striking new medical advances. In February 2017, a research center in Barcelona announced successful early trials of an HIV vaccine. Six months later, the American Food and Drug Administration approved a gene therapy treatment for leukemia. According to FDA Commissioner Scott Gottlieb, these sorts of technologies, "hold out the potential to transform medicine and create an inflection point in our ability to treat and even cure many intractable illnesses."

Increasingly, medical research is shifting from acute conditions like influenza toward chronic conditions like diabetes and Alzheimer's. A 2002 report by the World Health Organization called chronic medicine "the health care challenge of the 21st century". As a result, we are gradually learning how to arrest the body's natural deterioration. Ageing, the ultimate chronic condition, involves degradation of the DNA that guides cell replacement. There seems to be no reason, in principle at least, to prevent us from discovering a means of halting or reversing ageing itself. A 2008 study in *Nature Genetics* found that only a few genes determine whether a plant lives a single, annual life-cycle, or endures as a perennial – and that these genes can be manipulated. The same year, a study in the *Proceedings of the National Academy of Sciences* detected a strong correlation between unusual human longevity and a genotype called FOXO3A. The pieces seem to be there; perhaps it is only a matter of time before we learn how to fit them together.

What if that is sooner, rather than later? But what if it's not soon enough? Imagine that, following a few more breakthroughs, a scientific consensus emerges that we will have conquered illness and aging by the year 2119; anyone alive in 2119 is likely to live for centuries, even millennia. You and I are very unlikely to make it to 2119. But we are likely to make it relatively close to that date – in fact, relative to the span of human history, we've *already* made it very close right now. Think that through, carefully. What would it mean to realize that you very nearly got to live forever, but didn't? What would it mean if, in our looming senescence, we were increasingly forced to share social space with young people whose anticipated allotment of time massively dwarfs our own? If we are indeed the last mortals, we may be forced to confront an unprecedented shift in one of the oldest philosophical problems. When death ceases to be inevitable, can it still mean the same thing to lose your life?

## Missing the Boat

In Tolkien's *Lord of the Rings* mythology, the immortal Elves come to Middle-earth from the Undying Lands across the sea. When it is time to go, they load up their Elven ships and sail West. Sometimes, rarely, they allow a few mortals to come along.

In Tolkien's telling, boarding the ships to the Undying Lands does not make you *become* immortal (the Elves were just born that way). But tweak the story a bit and imagine it did. Now imagine some nice Elven friend invites you along. Just be on the docks next Thursday morning at 8, and off to immortality you will go. Then Thursday comes - and your alarm clock malfunctions. The car won't start. The subway is

operating with delays. It's 7:58 and you're just getting to the marina gates. You can see them, far off down the quay, unfurling their shimmery Elven sails, loosing mooring lines from the bollards. You run and you shout - but these Elves, despite having all the time in the world, are notoriously punctual beings. By the moment you stumble breathlessly to the end of the pier, your ride to forever is already bound for the infinite horizon.

Barely missing the Elven sail to the Undying Lands is not the same thing as barely missing the day's last scheduled flight to Reno. The scale of irony is staggering: for want of a few more minutes, you will miss out on thousands of years. Imagine the agony of the realization, gasping on the dock, watching your ship disappear forever. You might think: This is horrible. I wish I'd never even heard of these Elven ships or those Undying Lands. It's better to never have a crack at immortality than to knowingly miss it by the tiniest margin.

Our great-great-grandchildren will not be Elves, but they also may not be mortals like us. To be precise, the kind of immortality I have in mind is called *biological immortality*. A biologically immortal organism does not die from illness or aging – though they may still die in a plane crash. If humans acquired biological immortality, our expected lifespans would jump to enormous lengths. Almost everyone would still *eventually* die; statistics dictate that if you fly on airplanes every few weeks for eternity, eventually one will crash. If not that, there's nuclear apocalypse or the heat death of the sun. So the type of immortality I have in mind is not a magical one where death is strictly impossible. But it is the practical removal of death's certainty. Biological immortals would no longer *expect* to die within any relevant timeframe.

This point allows us to sidestep one of the eternal questions about immortality: is endless life something we'd really want? In fiction, immortality often emerges as a curse rather than a blessing. When medieval Europeans told tales of the Wandering Jew, they understood his endless transit as a punishment for doubting Christ, not a reward. In the film 'Groundhog Day', Bill Murray's character wakes up on the same morning, again and again. Exhausted by the tedium, he takes an electric toaster into the bathtub – only to find that suicide is impossible. As the philosopher Bernard Williams wrote in a celebrated essay called 'The Makropulos Case', endless life would likely be endlessly *boring*: "a boredom connected with the fact that everything that could happen and make sense to one particular human being... had already happened".

Perhaps the best expression of this thought is in Jorge Luis Borges' 1947 short story "The Immortal". The narrator is a Roman soldier who stumbles upon a life-extending

magic stream. After spending a thousand years in the City of the Immortals, he sets out to find an antidote, to make himself mortal again. He explains:

Everything among the mortals has the value of the irretrievable and the perilous. Among the Immortals, on the other hand, every act (and every thought) is the echo of others that preceded it in the past, with no visible beginning, or the faithful presage of others that in the future will repeat it to a vertiginous degree. There is nothing that is not as if lost in a maze of indefatigable mirrors. Nothing can happen only once, nothing is preciously precarious.

These reflections may be right: perhaps a meaningless, inescapable immortality *is* a curse. But the sort of biological immortality our great-great-grandchildren might have needn't be like this. For one thing, they could always *choose* to end their lives when there is nothing new left to them. Further, they will still have some sense of Borges' "preciously precarious", as they may still *accidentally* die.

What is distinctive for them is that death becomes only a possibility, an option, not an inevitability on a fixed timetable. This sort of immortality, I would think, is definitely not a curse. To have the *option* of living healthily a very long time, possibly for as long as one could want (but no longer), seems like an unmitigated blessing. So I proceed now, on the assumption that the first generation of immortals will possess something very much worth wanting. Now our question must be: what should we say about those left stranded on the dock as the ship to the Undying Lands fades in the distance?

## The badness of death reconsidered

Philosophers have been talking about death for as long as philosophers have been around to die. Diogenes of Sinope died in 323 B.C. First he instructed his followers that his corpse was to be unceremoniously tossed outside the city gates. Some were aghast: wild dogs would come and tear his body apart! No they wouldn't, insisted Diogenes, not if he had a stick to drive the dogs away. His confused audience pressed him to explain how he would operate a stick after dying. Now Diogenes played his rhetorical trump card: if he wouldn't be there to wield the stick, then why should he care what happened to his body?

A generation later, the Greek philosopher Epicurus made a similar point, though less colorfully. Death, he wrote, "is nothing to us, seeing that, when we are, death is not come, and, when death is come, we are not." The thought is this: death isn't like any bad thing happening to do you, because either you're alive (and death is not happening

to you) or death is happening (and you no longer exist for it to happen to). You and death are never really in the same room at the same time, so to speak.

Modern philosophers tend to resist Epicurus's conclusion that death is not bad for us. They point out that we can make sense of the comparative claim that it would have been good for Diogenes to have a few more happy years, so the deprivation of those years was a bad thing for him. But they do acknowledge a bit of a logical puzzle in accounting for *when* the badness of death takes place. As Epicurus and Diogenes point out, it seems odd to claim that death is bad for us after we are gone. Yet it seems equally odd to say that death is bad for us at any other time: is death bad for us while we are still alive? Could it be bad for us, even before we are born, that we will later die?

I leave this timing puzzle for other philosophers. I take it for granted that dying is bad for us. My aim is to show that dying is *worse* for the last mortals than for earlier generations. I am claiming that the advent of biological immortality actually worsens the lives of those who fall closest in never reaching it.

To understand why, we need to look at yet another philosopher who denied the badness of death. The Roman thinker Seneca accepted some of the same claims as Diogenes and Epicurus, but he was more concerned with our *experience* of death, both in our final days and in the years leading up to them. In Seneca's view, the main problem with death is that it makes us care about life more than we should. "No man can have a peaceful life who thinks too much about lengthening it," he wrote. "Many men clutch and cling to life, even as those who are carried down a rushing stream clutch and cling to briars and sharp rocks."

Seneca was a Stoic, the sort of philosopher who saw virtue in intellectual self-control, in keeping oneself from desiring the impossible. In a letter titled 'On Meeting Death Cheerfully', Seneca emphasized the importance of honestly accounting for death's inevitability:

Dying well means dying gladly. See to it that you never do anything unwillingly. That which is bound to be a necessity if you rebel, is not a necessity if you desire it. This is what I mean: he who takes his orders gladly, escapes the bitterest part of slavery – doing what one does not want to do. ... Let us therefore so set our minds in order that we may desire whatever is demanded of us by circumstances, and above all that we may reflect upon our end without sadness.

We should not fear death, according to Seneca, because death is "demanded of us by circumstances", and we will be unhappy so long as we insist on pointlessly rebelling against death's orders. Accept the inevitable with good humor and it can no longer hurt you.

There is a lot of wisdom in Seneca's observations, the sort of thing we might have called timeless wisdom. But the times are changing.

## **Fantasies and desires**

In the spring of 1935, Sigmund Freud was not doing well. His health had begun to fail, aggravated by an unseasonable Vienna chill. Nazis marched in the streets (and would soon exile him to London). But more immediate concerns were on his mind, as he sat down to write a letter to his friend and fellow psychoanalyst Lou Andreas-Salomé. "What an amount of good nature and humor it takes to endure the gruesome business of getting old!" he wrote. "Don't expect to hear anything intelligent from me. I doubt that I can still produce anything... but in any case I haven't got the time, as I have to do so much for my health. This is apparently like the Sibylline books: the fewer there are left, the higher the value."

Andreas-Salomé, Freud's correspondent, had lived quite a life herself. In her youth she had tried to start a commune with Friedrich Nietzsche. But she was now an old woman, hospital-bound and destined to die of kidney failure within two years. Freud had known her half his life. Though the letter is mostly light-hearted, Freud evidently realized that Andreas-Salomé was facing dangerous surgery. His sign-off is touching: "I wish I could tell you in person how much I have your well-being at heart. - your old Freud."

Freud may indeed have wished to see Andreas-Salomé in person, but he knew this was mere fantasy. Between him in Vienna and her in Berlin were hundreds of miles, the physical limitations of age, and Adolf Hitler. There was little chance they would ever see one another again. It's easy to picture Freud worrying about Andreas-Salomé's surgery, spending hours sunk in his armchair, sighing: if only I could see her once more.

Now imagine a different version of this incident. Imagine the iPhone had been invented 75 years earlier. Imagine Freud with his FaceTime app cued up, ready for his weekly video chat with his old friend. This week, especially, he wants to see her before her surgery. But no! The 4G network is down! There's a virus in his operating system! Freud bangs on his iPhone case, cursing his luck. Imagine him forced to write the same letter: "I wish I could tell you in person how much I have your well-being at heart" has a different intensity now. They were so close to seeing one another, to being in telepresence one last time before she went under the knife. This version of the wish has a different tenor: not a fantasy, but the lament of a reasonable desire unreasonably thwarted.

Technological progress creates new vulnerabilities to go with its new possibilities. When technology makes something newly possible, it changes the status of our wishing for that thing. Once upon a time, wishing to instantly see and speak to an old friend in another country was mere fantasy, the sort of thing for fables of magic mirrors and crystal balls. But now we have portable video cameras and wireless networks. Now a wish to chat with distant loved ones has the status of a perfectly normal desire – one that is vulnerable to painful failure.

Mobile phones provide many examples of this phenomenon. Classicist Mary Beard recently appeared on the BBC's 'Today' radio program to discuss the effects of technological change over recent decades. Her thoughts went straight to the effects of portable phones on dating. In her youth, one would have to spend entire days waiting by the house telephone, hoping that one's suitor might call back to make plans. There were not even answering machines. Now, of course, you carry around a little device that allows you to coordinate plans with anyone, instantly. But back then you had to make a choice between your sense of liberty and your social availability. The path to a lover's heart was fixed hard to the living room wall.

We can imagine teenage Mary Beard thinking: Oh, I wish I could go out to the movies while I'm waiting for this call. But given the technology of the day, her wish was mere fantasy. It was not something she could realistically have expected to happen, and it would have been strange to be resentful of the lack of the option.

But compare, now, a contemporary 13-year-old whose parents won't let her have a smartphone, though all her friends have them. She knows it's an option. She knows it's available. She knows that she *could* have this always-on chance to respond to that cute someone at any moment – but it's being denied to her, arbitrarily, unfairly!

It might seem that teenage Mary Beard, trapped on the living room sofa, wishes for the very same thing as the contemporary tween, glancing enviously at her classmates' Galaxy S8s. But this is illusory. Teenage Mary Beard's wish was a fantasy, an imagining of how things *could* be better but in fact were definitely not going to be any time soon. Our contemporary 13-year-old's wish is instead a *desire*. She wants a thing that she very well could have, if only something (or someone) were not keeping it out of her hands. The nearby reality of a wish's fulfillment changes its status from fantasy to desire, and so makes it reasonable to be unhappy in entirely new ways.

This is why the last mortals will have it particularly bad. Until now, the wish for immortality was mere fantasy. No one has ever lived beyond 122 years, and no one has reasonably expected to do so. But what happens once the scientists tell us that we're

drawing near, that biological immortality will be ready in a generation or two – then what? Then, suddenly, we are Freud banging on his iPhone, missing out on FaceTime with his dear dying Lou. Then, suddenly, we are on the dock watching the Elven ships sail away.

## **A Sorrow Most Profound**

Seneca told us to meet death cheerfully, because death is “demanded of us by circumstances” and cannot be controlled. Death’s inevitability is what makes it unreasonable to trouble oneself. Why suffer over the inability to attain a fantasy?

Yet, as I’ve been arguing, soon death may cease to be inevitable. It may become an option rather than a giver of orders. And, as the fantasy of immortality becomes a reasonable desire, this will generate not only new sorts of failed desires, but also new ways to become profoundly envious.

The last mortals may be forced to share Earth with the first immortals. This could happen gradually, as our confidence grows that biological immortality will be perfected within the lifespans of our great-grandchildren. Or it may come with harsh precision, a cleaver stroke through the generations. Perhaps it will turn out that that the only way to cure ageing requires gene manipulation before birth, during early embryo development. In other words, anyone born before the technology emerges is condemned to die, but all those born later will gain hundreds or thousands of years. Imagine the envious glances from Obstetrics nurses toward their charges in the months after that announcement.

Dim premonitions of this moment are already available to us; people in rich countries already enjoy life expectancies double that of the poorest places. And overlapping lifespans with people of another era is nothing new. The US Veterans Affairs Department continues today to pay a pension from the Civil War, due to the now 90-something daughter of a Union soldier who became a father at a very late age. Queen Elizabeth has held her weekly audiences with Prime Ministers born in both 1874 and 1966. Two of the people who’ve held the ‘oldest living person’ title, Anne D’Evergroote of Belgium and Emiliano Mercado del Toro of Puerto Rico, were both alive in 1891; between them they saw every year on this planet from 1783 until 2007.

But it's one thing to imagine whippersnappers coasting into the next century. It's another to know many will see the next millennium. The proportions are terribly imbalanced, and their distribution arbitrary. This is a sure recipe for jealousy.

In 1845 the poet Owen Howell published a now little-remembered rumination called ‘Westminster Abbey’. In the poem, centuries of dead prelates and worthies appear in spectral repose over their graves. Yet all they can find energy to do is turn and look enviously toward the living:

The stalwart baron and the steel-clad knight  
 Wake from death’s sleep, and at our bidding rise;  
 Chieftains and warriors, foremost in the fight,  
 Abbots and priests, appear before our eyes,  
 Summoned by fancy, - glimmering faint and white,  
 The spectres throng the courts and galleries;  
 While their black shadows trail along the ground,  
 In silence most complete, and sorrow most profound.

The last mortals may be ghosts before their time, destined to look on in growing envy at the enormous stretches of life left to their near contemporaries. In one sense, it will be the greatest inequity experienced in all human history.

From an objective perspective, the problem of the last immortals seems fleeting. After all, they will die off quickly, relatively speaking, and then everyone remaining will share equally in the new problems of extraordinary longevity. But we may not have the luxury of taking this objective perspective, because we may *be* those last mortals. We may be the ones turning toward our descendants with the most intense resentment and envy anyone has ever known. Is there anything we can do to prepare?

One promising thought comes from the existential philosopher Simone de Beauvoir, whose 1946 novel *All Men are Mortal* is yet another in the curse-of-immortality genre. Here the protagonist is a young actress, Regina, who unaccountably befriends a strange, lonely man named Fosca. The latter has been wandering Europe since the 1200s, unable even to be wounded. He is, of course, profoundly bored with eternal life, and wishes that he could die.

What is distinctive about Beauvoir’s version of the story is the way that Regina and Fosca begin to affect one another. Fosca finds in her youth and curiosity an invigorating push to re-examine his own assumptions. Regina, meanwhile, sees a chance to transcend her mortal limitations by lodging herself in Fosca’s endless memory. “One day I’ll be old, dead, forgotten,” she realizes. “And at this very moment, while I’m sitting here thinking these things, a man in a dingy hotel room is thinking, ‘I will always be here.’”

This may be our best hope for avoiding the conversion of immortal fantasy into cruelly-stymied desire as well as a mountain of intergenerational envy. Perhaps the last

mortals can find a way to tag along, in memory at least, with our undying descendants. The foundations for such a view exist in the work of the late philosopher Derek Parfit, who held that the onward continuation of the values and ideal we share with others matters more than personal survival. Similarly, Samuel Scheffler's recent book *Death and the Afterlife* claims that our most central efforts in life gain meaning precisely from the realization that they will outlast us. Maybe this is the answer? Like the heroine of Beauvoir's novel, perhaps we must seek solace in our lasting impact upon those whose will be here long, long, long after we are gone.

I have no idea whether that really is sufficient existential balm for missing the ship to the Undying Lands. What I have tried to show is that a realistic near-future will fundamentally change our assumptions about the inevitability of death, and with them the reasonableness of desiring immortality. Philosophers, and everyone else, might do well to begin reflecting on this change before it appears. If only we, like our descendants, had endless time to think.