A Séance with an Immortal

ROY SORENSEN

To understand death, you need to dwell on the alternative. If you knew an immortal, then you could ask him to speak from experience.

Immortals are forbidden, unequivocally, to communicate with human beings. Equivocal immortals interpret this as permitting equivocal communication. They hint through oracles and omens, dreams and divination.

As an anthropologist, I am incapable of brevity. I am resorting to a medium. There would be a commotion if I employed a carpenter to explain the nature of immortality. To preserve plausible deniability, I have chosen a philosophy professor.

There are fewer loose ends if the medium thinks he is faking. My philosophy professor, for instance, acknowledges the theoretical possibility that this séance is the genuine article. But he does not take this suggestion seriously. He placidly compares it to the unverifiable hypothesis that an evil demon is completely deceiving him. The professor even congratulates himself for presenting *his* philosophical views as news from an immortal anthropologist.

Like human anthropologists, I have become attached to the people I have studied. I am sorry they must die. Sympathy moves me to compromise the anthropological ethic of non-interference. I also feel an obligation to reciprocate for the insight human beings have given me. Just as mortals deepen understanding of their condition through a comparison with immortality, immortals deepen understanding of their condition through a comparison with mortality.

By my reckoning, the human failure to come to grips with mortality exacerbates the terrible fact of death. People compromise their pursuit of finite goods to gamble for infinite goods. They pooh-pooh the price they pay for these grandiose lottery tickets by exploiting the infinite's intoxicating ability to dwarf the finite into insignificance. The sense of insignificance sticks, generating escapism by the listless and fanaticism by the energetic. The disorienting scale effects make people behave like hypoxic mountaineers.

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My séance is designed to strengthen understanding of death by strengthening understanding of immortality (and some infinitistic varieties of mortality). This effect is achieved even if my tale of immortals is received like *Gulliver's Travels*. Whether read as fact or fiction, my stories can curb some habits of thought bred by a monotonous diet of finitude.

One theme is that the difference between mortality and immortality is largely a matter of degree. There are a *few* qualitative differences between mortals and *some* types of immortals (generally but not invariably to the advantage of the immortals). The strategy is to achieve insight by a sequence of contrasts. Just as an entomologist best understands the ant species *Tapinoma sessile* by locating that house-loving species along the larger biological continuum of possible insects, the philosopher best understands human mortality by locating mortals in the larger space of possible mortals and immortals. Whether these beings actually exist does not affect the principles governing mortality and immortality.

Human understanding of mortality is asymmetric

When Austin Duncan-Jones died, a manuscript entitled 'Man's Mortality' was found among his papers. The editor of *Analysis* published it alongside his obituary. The subject of Duncan-Jones' piece is man's imbalanced comprehension of 'All men are mortal'. Human beings understand this proposition but they have trouble understanding its negation. What would it be like for a man to be immortal?

One way to work out the meaning of a proposition is to imagine what it would be like to verify it. But how could one confirm that there is a man who lives forever? Waiting will not work. There is no end to immortality.

The second problem raised by Duncan-Jones concerns personal identity. Psychological relations, such as memory, unify the stages of a person's life. Normally, these stages span less than a hundred years. But an immortal spans millions and billions and trillions of years. Can these unifying relations be stretched infinitely? Why wouldn't the relations snap? Then there would be *several* people over time.

To keep the connections with the gigantic past alive, Duncan-Jones imagines that the immortal man is granted an ever-growing mental capacity (such as memory storage) to carry the ever-growing

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burden. This radical augmentation would raise another difficulty with personal identity: what makes an ordinary mortal identical to such a super-intellect? Zeus is said to have transformed ants into men to relieve Aeacus's loneliness on the Island of Aegina. We may wonder whether an ant could survive such a metamorphosis. We may wonder again whether a man could survive metamorphosis into a mental titan.

Duncan-Jones is right about the human tendency to neglect scale effects. They accept tales of people who grow to be a hundred feet tall. The storytellers pass over the fact that forces increase at a geometric rate. The bones of a giant human would collapse under their own weight.

But if Duncan-Jones thinks that there would have to be more than one person to unite the mental events associated with an immortal body, then he should think the required number of successive inhabitants is infinite. If there were only finitely many, each would eventually exceed the time limit imposed by the unifying relations.

Human *bodies* also need unifying relations. If there is any temporal scale effect for the relations that govern personal identity, there should be a temporal scale effect for human bodies. But there are no such temporal constraints for human bodies. Biologists would be astonished to find a body that was a billion of years old. But they can no more dismiss the possibility than creationists could dismiss the possibility of a fossil being a billion years old. Once biologists agree that a human *body* has remained healthy for a billion years, they are in an excellent position to infer that a single individual has lasted a billion years.

Normal human beings undergo a prodigious amount of change. Consider yourself. You were once a fetus with no more mental life than an ant. My, have you grown! If you can span the gap from fetus to mortal man, then you can span the difference from mortal to immortal.

There is no definitional guarantee that people you encounter are only of a finite age. Suppose you see an old woman, Ludwigina, in a nursing home wearily uttering '... four, three, two, one, done!' When you ask what she has finished, Ludwigina explains 'Counting the negative integers.' It would be an empirical question whether Ludwigina was infinitely old.[1]

[1] Ludwig Wittgenstein intimates that the originless counter is an *a priori* absurdity in *Remarks on the Foundations of Mathematics* (Oxford: Basil Blackwell, 1956), third edition.

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Nevertheless, I agree with Duncan-Jones' general moral:

> The striking thing here—the lesson to be drawn—is that we usually assume that, if a proposition is familiar, and seems to consist only of plain, well-understood concepts, then its contradictory must be equally plain and well-understood; and that this seems to be a mistake. There is a genuine difficulty in expounding the meaning of 'Some men are not mortal' that doesn't attach to 'All men are mortal'.[2]

According to truth-conditional semanticists, to understand a statement one must know the general conditions under which the statement is true. If one must know *all* of these truth-conditions, then anyone who understood a statement would understand its negation equally well. But understanding a statement only requires knowledge of enough truth conditions to participate in activities such as paraphrase, deduction, and translation. These activities do not require a comprehensive grasp of contrasts even though such exhaustive knowledge improves performance. For instance, a student can translate without translating as well as his language instructor.

Familiarity makes many contingent truths better understood than their negations. People's grasp of 'Some things are finite' is made firm by their steady diet of finite things. But they have trouble grasping its negation. The human grasp of 'Something exists' is made firm by their contact with existing things. But they have trouble with 'Nothing exists' and so are baffled by the question 'Why is there is something rather than nothing?'. Positive existential statements such as 'Neptune exists' are understood but negative existential statements such as 'Vulcan does not exist' are foci of philosophical perplexity. It is trivial to say 'There is space' but an ambitious metaphysical enterprise (undertaken by Peter Strawson in chapter two of *Individuals*) to grasp the alternative being excluded.

The purpose of this séance is to *improve* human understanding of immortality. I concede that people understand 'All men are mortal'. But understanding comes in degrees. Understanding of a statement improves with improvements in one's understanding of its negation. For instance, the statistician R. A. Fischer improved

[2] Duncan-Jones, Austin, 'Man's Mortality', *Analysis* **28** (1968), 69.

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human understanding of 'There are two genders' with hypothetical scenarios featuring creatures with more than two genders.[3]

Our understanding of a proposition improves as we are able to answer more questions about it. Someone who can answer 'Why p?' understands p better than someone who cannot.

Biologists have given fairly good explanations of 'Why are all men mortal?', however, they have a policy of not addressing questions such as 'Why is it lamentable that all men are mortal?'. To understand how death harms a man we need to make a comparison with the state of affairs in which death does *not* take place. A man who never dies would be developmentally instructive. He would be studied in the same spirit as the 'Peter Pan' salamander, *Ambystoma*.[4]

Most human beings hope for immortality. To understand the hope, one must understand immortality. Even if you have lost the hope (like the philosophy professor through whom I speak), you may be interested in understanding how others might regard immortality as a live possibility.

The professor has an immoderate admiration of Goethe's *Faust*. So he winces at Goethe's quip, 'Those who hope for no other life are dead even for this life.'

The professor takes some solace in the fact that Goethe also, inconsistently, maintained that it is impossible to imagine one's own death.[5] You can imagine observing a corpse that resembles you. But if you are doing the observing, you are not dead in the imagined scenario.

Sigmund Freud worked himself into a similar inconsistency. On the one hand, he maintained that an individual cannot imagine himself dead (for Goethe's reasons). On the other hand, in *The Future of an Illusion*, he postulates a death instinct (labelling it 'Thanatos' after the Greek god of death).

Both Goethe and Freud underestimate human imagination. Given that I can imagine you dead, then you can imagine me imagining you dead. If you can imagine me imagining you dead, you are well on your way to imagining yourself dead.

[3] R. A. Fisher, *The Genetical Theory of Natural Selection* (London: Oxford University Press, 1930).

[4] When the pond of this Mexican salamander fails to dry, the tadpole stops its metamorphosis into a land-dwelling adult and remains in the water as newt-like creature. Unlike Peter Pan, these juvenilized salamanders reproduce.

[5] Conversations with Friedrich von Müller (May 5, 1822).

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Denying the fact of death

Mortals have been slow to learn how to live as mortals. Part of the problem is denial. Adults find it obvious that animals are mortal. People also grant their continuity with animals. So how could human beings possess an afterlife that all other forms of life obviously lack? How could immortal animals evolve from the muck and goo of mortal organisms?

Human beings have a soft spot for their kind. Instead of dispassionately completing the biological syllogism, they crane their necks for transcending differences between man and beast. Psychologists who study 'terror management' have intriguing experiments that measure how reminders of death increase desire for these comforting disanalogies.[6]

Escapist sophistry over-ripens into philosophy. The Pythagoreans back-pedal through the syllogism and claim to reincarnate through animals. They commune with the timeless domain of numbers.

While awaiting a death sentence Socrates adds an inspirational footnote to the syllogism he immortalized:

All men are mortal.

Socrates is a man.

Therefore, Socrates is mortal.

Socrates admits his *body* will be destroyed. But he thinks his soul will survive. His arguments on this topic are well below his usual high standard. Out of respect for Socrates, I will not repeat them.

When little can be said for the truth of a belief, much will be said of its benefits. For instance, Cicero characterizes belief in immortality as ennobling. He defiantly says he would rather be wrong with Plato than right with the sceptics! Perhaps this stems from Cicero's patriotism: 'No one could ever meet death for his country without the hope of immortality.' [7]

Immanuel Kant contended that morality makes sense only if the good are rewarded and the bad are punished. Since justice is not

[6] J. L. Goldenberg, T. Pyszczynski, J. Greenberg, S. Solomon, B. Kluck, and R. Cornwell, 'I Am not an Animal: Mortality Salience, Disgust, and the Denial of Human Creatureliness', *Journal of Experimental Psychology: General* **130**, No. 3 (2001), 427–435.

[7] *Tusculanarum Disputationum* (I, 15), I. The legendary bravery of Soviet soldiers makes Cicero seem, at best, outdated.

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achieved in our lifetimes, people must believe in an after-life to make sense of this life. Kant regarded theism and belief in immortality as a 'regulative ideal'. Once again, I am silenced by my respect for an outstanding intellect.

Denying the harmfulness of death

Instead of denying the fact of death, some comfort seekers deny its harmfulness. Epicurus concedes that your death might be bad for others. But he argues that it cannot harm *you*. True, the superstitious picture death as a painful, paralyzed state in which you are picked apart by scavengers. Epicurus reminds you that when dead, you do not exist and so are not around to suffer. Since causes cannot precede their effects, death cannot harm you before it happens. Nor can death harm you while it is occurring; where death is you are not. Since there is no time at which your death harms you, Epicurus concludes that your death does not harm you.

Epicurus whole-heartedly agrees that *fear* of death can harm you. That is why he tries to vanquish the fear by showing that your death is not bad for you.

Epicurus last turns to the concern that future non-existence is bad. He observes there was a comparable period of non-existence before your birth. Since your past non-existence was not bad, your future non-existence will not be bad.

Life extension

Contemporary hedonists counsel their followers to make the most of what life they have. They counsel moderation in the hope of prolonging life. Most agree with gerontologists that human beings cannot live much beyond 85. Although human beings are not designed to die, they are not designed to live beyond their reproductive phase. Like all organisms, human beings are front-loaded. Traits that helped reproduction were adopted even if they have severe after-effects. Aging is the accumulation of these after-effects.

Old people are like cars that continue to function beyond the lifetime for which they were manufactured. The prudent resign themselves to the intelligent management of their decline.

The romantic rail against their fate.

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Do not go gentle into that good night,

Old age should burn and rave at close of day;

Rage, rage against the dying of the light. (Dylan Thomas)

Some mortals want to live a thousand years. Some ignore the ridicule of contemporary scientists and freeze themselves in the hope of being revived and cured by future scientists.

Lengthy life extension would be philosophically interesting. Derek Parfit claims that utility monsters are inconceivable.[8] He says human beings cannot imagine someone being a million times happier than themselves. Parfit can imagine there being billions of people who are only marginally better off alive than dead. The utilitarian must, so it seems, prefer this crowded world to ours. What we few have in quality, the many swamp with quantity. Some utilitarians hold their noses and swallow the repugnant conclusion.

Repugnance at the overpopulated world is blunted by its equity. At least the overcrowded world is fair. And there is all the camaraderie. However, substituting longevity for intensity sharpens the repugnance. Extend the life of one of Parfit's marginal men a trillion years. At any given time, this solitary, temporal utility monster is just barely better off alive than dead. But the efficiency of his life-style licenses a transfer of all resources to him.

Contemporary utilitarians trace their pedigree back to the ancient hedonists. But the hedonists were not maximizers. The Epicurean poet Lucretius condemns efforts to lengthen your life: No matter how long you live, the period you spend alive is insignificant compared to the infinite time you spend dead.[9]

The friends of death exaggerate its consolations

The pessimistic hedonist Hegesias argued that death was good because life was bad.[10] He counselled his students to commit suicide. Ptolemy banned his lectures on the grounds that that they would depopulate his kingdom.

[8] Derek Parfit, *Reasons and Persons* (New York: Oxford University Press, 1984), 246–8.

[9] Titus Lucretius Carus, *De rerum natura* translated by R.C. Trevelyan (Cambridge: The University Press, 1937), 1087–1094.

[10] Wallace I. Matson, 'Hegesias; the Death-Persuader; or, the Gloominess of Hedonism', *Philosophy* **73** (1998), 553–557.

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Greek mythology explores some forms of immortality that are inferior to mortality. Eos (the dawn goddess) loved Tithonus (the prince of Troy). She asked Zeus to make Tithonus immortal. Zeus complied. But Eos forgot to ask Zeus to also grant eternal youth. Tithonus grew older and older. Out of pity Eos changed her lover into a grasshopper.

Life can go so badly that one is better off dead. The main philosophical disagreement was about whether suicide is permissible to end this misery.[11] The consensus was that if life was going well, death was bad.

Thomas Nagel thinks that a preference for immortality is rationally mandatory.[12] If life is going well, then one should want more of it.

There are premises for a position stronger than Nagel's. In the absence of special circumstances, the desire to die is irrational. That is why others can paternalistically thwart suicide. Consider a despondent individual who can live indefinitely (he is contingently immortal) or who can end his life. Given that we know his misery is temporary, we are entitled to thwart his suicide. If we know that he will eventually settle into uninterrupted happiness, then the intervention is justified regardless of whether the despondency will persist for a year, or a century, or a million years. For the suffering of any finite period is swamped by the infinite period of happiness that follows. Indeed the swamping effect is achieved even if he is, on average, just marginally better off alive than dead each year of his infinite hereafter.

Odysseus refused an offer of immortality by Calypso. To the maximizer, that is like suicide. A friend of Odysseus would have grounds to compel acceptance of Calypso's offer.

Satisficers say that one is sometimes permitted to settle for what is good enough. So a satisficer could maintain that once you have filled that quota, you may rationally prefer that your life to end.[13]

[11] Euthanasia is the only mercy human beings praise when granted to animals but condemn when extended to themselves. The inversion extends to the distinction between acts and omissions. Logically, actively bringing about the beneficent death of a suffering animal is better than merely letting the good fall upon it. Illogically, actively bestowing this good on a human being is worse than letting it fall upon the individual.

[12] Thomas Nagel, 'Death', *Noûs* **4** (1970), 73–80.

[13] At least one prominent satisficer, Michael Slote, rejects this application. Slote agrees with Nagel that one must always prefer more life to less. See Slote's 'Rational Dilemmas and Rational Supererogation', *Philosophical Topics* **14**, No. 2, 59–76; 66–7.

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Bernard Williams innovates by arguing that death can be rationally mandatory even if life is going well (as measured by one's standard of living, health, and other quality of life indicators). He illustrates his viewpoint with Karel Capek's play 'The Makropulos Case'. Elina Makropulos is 342 but she looks 42. Her father gave her an elixir that stops the aging process. Elina has done everything it makes sense for a 42–year–old to do. She is bored. To escape the tedium of immortality, she refuses to take another dose. (A young woman ultimately destroys the elixir—over the protests of some older men.)

Bernard Williams endorses Elina's decision: life is an exhaustible good. Those who yearn for immortality face a dilemma. If you retain your character through an infinite life you will exhaust everything that makes sense for you to do and so will become bored. If you do not retain your character (because of amnesia, personality transformation, and so on) then you have not persisted through an infinite life. Instead there has been a succession of people. Williams concludes

> ... that an endless life would be a meaningless one; and that we could have no reason for living eternally a human life. There is no desirable or significant property which life would have more of, or have more unqualifiedly, if we lasted forever. In some part, we can apply to life Aristotle's marvelous remark about Plato's Form of the Good: 'nor will it be any the more good for being eternal: that which lasts long is no whiter than that which perishes in a day.' [14]

Aristotle is not as much of an ally of Williams as Williams intimates. The point of Aristotle's remark is merely to reject permanence as a necessary or sufficient condition for goodness. Whiteness is neither good nor bad in itself. Given this neutrality, whiteness does not increase in value if it persists. Aristotle believed that the *form* of goodness is neutral. Particular good things, on the other hand, ought to exist. So Aristotle believed that ephemeral goods are better if they last longer. Even if life is not intrinsically good, life is good as a means to intrinsic goods.

The utilitarian prodigy John Stuart Mill fell into a depression as a young man. His gloom eventually consumed his refuge in music. The young man observed that the pleasure of music depends on

[14] Bernard Williams, 'The Makropulos Case: Reflections on the Tedium of Immortality', *Problems of the Self* (Cambridge: Cambridge University Press, 1973), 89.

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novelty or intermittence. An octave consists of only five tones and two semi-tones.[15] These can only be put together in finitely many ways—most of which have already been discovered by the great composers. Mill became disheartened by the exhaustibility of music.

Mill does not state why he would not settle for intermittence. Music lovers cycle through their collections. Why not schedule a variety of such repeatable pleasures? Søren Kierkegaard contemptuously described this as the method of rotation.[16] But what is so bad about conducting your life like a well-run farm? The desire for variety is *typically* satisfied by a cycle. Repetition does not make Spring boring. Cycles are a natural compromise between novelty and familiarity. Traditions, such as Christmas celebration, are enhanced by repetition. After a long separation, the nostalgic traveller resumes his old routine with new appreciation of the old and familiar.

Fear of death creates its own share of boredom. To stave off death, my unwitting host swims laps for an hour each morning. That is so boring that the rest of his day is bound to be relatively interesting.

Boredom in a healthy man is a sign that he has interesting alternatives. Kierkegaard should have gotten out in the sunshine more frequently. He spends too much time indoors inventing literary alter egos.

Martha Nussbaum argues that mortality is fundamental to the human way of life.[17] But the philosophy professor's reaction to the news of his immortality would be human (maybe all too human). He would still be a creature of habit. Sure, there would be some changes. He would inquire whether his family could also receive immortality. He would cancel his life insurance. He would buy a lifetime membership to the American Philosophical Association. But most of his routine is not built on the assumption that he is mortal. The professor does most of what he does for the fun of it. When you discover something is rewarding, you do it again. Sure, the philosophy professor thinks about death more than most

[15] John Stuart, Mill, *The Autobiography of John Stuart Mill* (New York: Penguin, 1990), 90.

[16] Søren Kierkegaard, 'The Rotation Method', in *Either/Or*, in *A Kierkegaard Anthology*, Robert Bretall (ed.) (New York: The Modern Library, 1946).

[17] Martha Nussbaum, *Therapy of Desire* (Princeton, New Jersey: Princeton University Press, 1994).

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people—even more than most philosophers. But that still is only a small part of what he thinks about.

The belief that one is immortal might create alternative sources of boredom. Time would no longer be as scarce a resource, so life would lose some of the interest it gets from being lived in a hurry. But there would be the compensating advantage of being able to undertake projects with longer time horizons. New goods could be produced, old goods could be sustained.

Obviously, there would be major disruptions if the whole human race suddenly became immortal. The American social security system is in upheaval because people are living longer than projected by 1930s demographers. But people are resilient. Few would volunteer to revert to mortality.

Death solves many problems. The longer we gaze on the bright side of mortality, the darker the appearance of immortality: What headache immortality would be to utilitarians! A standard objection is that we cannot know which action produces the best consequences because the infinite consequences of each action overwhelm our ability to prognosticate. J. J. C. Smart discounts the issue of unforeseeable consequences partly on grounds that physics ensures that human species will become extinct.[18] Immortality dis-inters the problem.

Existentialists suggest that life is meaningless because God does not exist (or because *belief* in God has died). The existentialists then try to pull the fat of meaningfulness out of the fire of nihilism. They hint that death makes time a scarce resource. You have to squeeze in what you can, each decision being made against the stark backdrop of finitude.

Immortals can still be under time pressure

Poets have long attributed their impatience to their limited time. Witness the opening stanza of Andrew Marvell's (1621–1678) 'To His Coy Mistress':

Had we but World enough, and Time,

This coyness Lady were no crime.

[18] J. J. C. Smart makes the claim in his contribution 'An Outline of A System of Utilitarian Ethics' to *Utilitarianism: For & Against*, co-authored with Bernard Williams (Cambridge University Press, 1973), 33–34.

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We would sit down, and think which way

To walk, and pass our long Loves Day.

With time on his side, Marvell's courtship would be a stately affair. He could do justice to every detail of his mistress:

My vegetable love should grow

Vaster than Empires, and more slow.

An hundred years should grow to praise

Thine Eyes, and on thy Forehead Gaze.

Two hundred to adore each Breast:

But thirty thousand to the rest.

Whatever else Marvell wished to do could be postponed. An endless stock of time ensures that there are no lost opportunities. Everything will keep.

Mid-poem, Marvell snaps out of his reverie and picks up the tempo:

But at my back I alwaies hear

Times winged Charriot hurrying near:

And yonder all before us lye

Desarts of vast Eternity.

Both the lover and the beloved desiccate in the hourglass of history. Marvell concludes that the amorous pair should seize the day.

Marvell exaggerates the patience of immortals. A hundred years to praise a woman's eyes? That's too long! It is true that immortality liberates us from some deadlines. But for us, as for you, many opportunities are ephemeral. To see fragments of Comet Shoemaker-Levy 9 strike Jupiter you had to be in the right place in July of 1994. Many astronomical events are one of a kind occurrences. To witness these unrepeatable events, immortals must travel. Since we do not travel instantly, some of these events are not co-observable. Other events are co-observable but only when we *hurry* from one location to the other.

The objects of our affection come and go. The goddess Aphrodite must consummate her marriage to Anchises before he dies at Troy. An angel must warn Joseph before Herod kills all the babies in Bethlehem. Attachment to mortals requires the immortals to keep pace with them.

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Other time pressure wells up solely through competition with fellow immortals. Immortals race for sport. Intellectual immortals hurry to become discoverers. Consequently, we wear watches, practice to perform tasks quicker, and buy timesaving goods and services. Even with immortality, time is a scarce resource.

Immortality does not entail repetition

The friends of death allege that immortality is inevitably boring. A common premise for this conclusion is that there would be infinite repetition. This assumption is often supported with the following reasoning: there are finitely many things, so there are only finitely many arrangements of things. Time is infinite. Therefore, the same arrangement must repeat endlessly.

This reasoning is associated with the eternal recurrence. Aristotle's student Eudemus of Rhodes writes that according to the Pythagoreans, 'Everything will eventually return in the self-same numerical order, and I shall converse with you staff in hand, and you will sit as you are sitting now, and so it will be in everything else, and it is reasonable to assume that time too will be the same.'[19]

However, a finite object can have infinitely many *relative* properties. The circumference of a wheel equals pi and pi is an irrational number. So it is possible to spin the wheel infinitely many times without the wheel ever repeating its exact orientation to another object. Indeed, the Museum of Novelty has an exhibit featuring three wheels that can never repeat an orientation. The three wheels spin at rates that guarantee that they will never repeat their relative orientations. A hundred years ago, I granted Georg Simmel a peek at the three-wheel exhibit. He used the experience (which he interpreted as a creative vision) in a criticism of Fredrich Nietzsche.[20]

The lesson for Elina Makropulos is that she needs to keep up with her environment. She never exhausts her meaningful activities. She has important *relational* properties and so a potentially endless array of personal possibilities. Little wonder that stories that portray the immortals as bored tend to be

[19] H. Diels and W. Kranz, *Die Fragmente der Vorsokratiker*, sixth ed., (Berlin: Weidmann 1951), 58B34.

[20] Georg Simmel, *Schopenhauer und Nietzsche: Ein Vorrogszyklus* (Lepzig: Verlag von Duncker & Humblot, 1907), 250–51.

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self-defeatingly interesting. The characters of *Highlander* are intriguing just because they must stealthily navigate through such varied epochs.

At the same time I gave Simmel a peek at the three wheels, I let the Norwegian mathematician Axel Thue listen to the 012 tune whistled by the automaton that guards the exhibit. Since the 012 tune only has three sounds you might think that point was to illustrate the principle that robots must eventually repeat their behaviour. But simple automata need never repeat themselves. The automaton's 012 song runs:

2102012102021020120210121020 1...

Axel Thue realized that there were no adjacent blocks of tones (of any length). Thue presented his insight in terms of letters in a formal language.[21] If there are only two symbols, 0 and 1, then a string of more than three letters must involve some repetition. For instance, if 010 is continued with 0, then there will be two consecutive 0's. If 010 is continued with 1, then there will be two consecutive blocks of 01's. However, if there are three symbols, then an infinite string can be free of any repetitions. There is a simple, deterministic rule for generating such consequences.[22] Thus there can be determinism and predictability without repetition. Aperiodic determinism shows how history can have a pattern without being cyclic.

The floor beneath the three-wheels exhibit has aperiodic tiling. It looks like the entrance of the Carleton College Center for Mathematics and Computing. The tiles only have two shapes: 'kites' and 'darts'. In 1969 I let the Briton Roger Penrose take a look. He published his 'discovery' in 1974. In 1984, Penrose went on to reveal the rules for fitting together kites and darts.[23] He shows how they can cover an infinite plane in uncountably many ways. There are local symmetries, such as the cartwheel pattern at Carleton College. But no specific patch is ever repeated. The Museum of Novelty is infinitely large and never closes. Curators are keen to keep immortal patrons constantly amused.

[21] Axel Thue,'Über unendliche zeichenreihen', *Norske Vid. Selsk. Skr. I. Mat. Nat. Kl. Christiania* 7 (1906), 1–22.

[22] Joe Roberts, *The Lure of the Integers* (Washington, D. C.: Mathematical Association of America, 1992), 17–18.

[23] Martin Gardner, *Penrose Tiles to Trapdoor Ciphers* (New York: W. H. Freeman & Co., 1989).

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Roy Sorensen

Immortals with finite experience

There are immortals who live much like human beings. The general formula for their existence is presented in Adrian Moore's meditations on 'veiled immortality'.[24] The individual's existence is divided into a Zeno sequence: he lives half of his life, followed by a trillion years of nothingness, then a quarter of his life followed by a trillion years of nothingness, then an eighth of his life followed by a trillion years of nothingness, and so on, ad infinitum. A 'period of nothingness' is an interval in which everything stops (with the possible exception of a clock ticking in a remote corner of the universe). This interrupted immortal thinks he is a mortal. His life could feel the same as yours. Although he never dies, his life is shaped by a limit that is as bad as death.[25]

Death is bad when it limits your 'personal time'—a term borrowed from efforts to coherently interpret time travel stories. Personal time, roughly the time measured by your wristwatch, is a measure of the normal rate of change. Unlike external time, personal time is a fiction to keep events organized in a familiar sequence.

It is possible to have infinite personal time within a finite interval of external time. Suppose you only had two minutes to live but that your personal time is apportioned in a Zeno sequence. You live one year of personal time in the first minute, another year of personal time in the next half minute, another year in the next quarter of a minute, and so on. After two minutes of external time you are dead. But you have infinitely many years of personal time.

Mortals with infinite experience

I had a brief encounter with a lady who had infinitely many lines of parallel consciousness. Like a Mayfly she was framed to live a single day. But since she enjoyed so many lines of experience what she lacked in length she made up for in breadth.

[24] Adrian Moore, *The Infinite* (London: New York, 2001), second ed., 228.

[25] And so says Roy Sorensen in 'The Cheated God: Death and Personal Time', *Analysis* **65**, No. 2 (April 2005), 119–125. I am not putting words in his mouth.

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Human mentation involves much parallel processing. But human consciousness is linear. Conceiving parallel consciousness requires ingenuity.[26]

Happily, I can avoid imposing this mental strain on my sequential audience by turning to a race of mortals that have infinite, linear experience. The Negatives have infinite pasts but finite futures. They are called the Negatives because their lives can be modeled by the negative integers. They have no beginning but do have an end.

The Negatives take pride in their pure mathematics. One of their numbers, Morteus Minus (∞ BC, 403 BC) belatedly realized that he could have answered great arithmetical problems by brute enumeration. For instance, Goldbach's conjecture states that every even number is the sum of two primes. Given an infinite past, Morteus could have set aside one number a year for testing. The problem would have been solved long ago. (Indeed, arbitrarily long ago.) But by the time Morteus Minus realized that he could have used brute enumeration, it was too late.

The homogeneity of Negative society keeps it tranquil. The Negatives are all the same age (infinite), so there are no generation gaps. There is no reproduction. That pre-empts an enormous amount of conflict. Poignantly, that also means that the Negatives are a dying race.

Some social controversy arises from the Negatives' ability to estimate their death dates. This foresight leads to disputes similar to the ones human beings have about future generations. Those who anticipate short futures want resources consumed sooner than later.

You might think this conflict could have been avoided if the Negatives had been thriftier. If a Negative had saved one dollar a year, he would have had infinitely many dollars. He could have afforded to share the wealth; giving away every second dollar (or every third, or every fourth, etc.) would still have left him an infinitaire. By the time any Negative thought up this savings plan, it was too late.

Negatives can only exploit their infinite lifetimes in an unplanned way. They did not choose a bad alternative because a choice at any time would have been too late to commence the infinite project.

[26] Derek Parfit, *Reasons and Persons* (New York: Oxford University Press, 1984), 246–8.

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But this does not save the Negatives from inevitable regret about their finite projects. Whenever a Negative starts savings, he will regret not saving earlier.

Their remorse is curiously incomplete. When you have remorse for tardiness, you can specify an alternative that would have completely cleared yourself of wrongdoing. The Negatives only have an infinite chain of less wrong actions.

Human beings are immune from 'originless sin'.[27] It only crops up in their theology. Augustine worried about what was God was doing before he created the world. Since the world is good, God appears to have been inevitably tardy in bringing it into existence.

Denumerable immortals

Anxious Negatives complain that their lives are almost over. Less than a millionth (or a billionth or a trillionth) of their lives remain. Their stoical neighbours reply that this is not so bad because that is how it has always been.

The Negatives were thrown into consternation when they encountered the Positives. The life of a Positive is modelled on the positive integers. Positives have a beginning but no end.

When the Positives learned of the Negatives, many Positives became depressed. They inferred their immortality was no better than the mortality of the Negatives. The biography of an immortal Positive can be mapped on to the biography of a mortal Negative. Since death greatly devalues the life of a Negative, the corresponding Positive must suffer from a corresponding harm. Many Positives conclude they are harmed by the fact that they did not start earlier—or that they had any start at all.

Other Positives believe that there are important differences with the Negatives. Positives confront a different decision problem than the Negatives. Suppose a Positive is given a bottle of Everbetter wine.[28] It always gets better (asymptotically up to a finite limit). When should the immortal drink the wine? Not now because it will be better later. Not later because it will be better after a longer wait. Thus the immortal never drinks the wine!

[27] For more on originless sin, see Roy Sorensen 'Originless Sin', *Philosophical Quarterly* **56**, No. 223 (2006), 213-233.

[28] John Pollock, 'How do you Maximize Expectation Value', *Nous* **17** No. 3 (1983), 409–421.

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This argument assumes that the Positive is temporally neutral. However, the reasons that human beings have a prejudice in favour of the future are also reasons for the Positives. Decision-makers who focus on what they can change do better than those who think impartially. Thus agents who focus on the future will become more common if they reproduce more of their kind. Over time, future oriented agents dominate the population. Evolution takes place because of the selective pressure that redistributes genotypes over time. Although Positives never die, they do reproduce. That is enough to alter the distribution of genotypes. Evolution does not require that only the fittest survive. It is enough that the fittest have the greatest reproductive success.

The Positives have live specimens from their entire evolutionary history. They also have generation gaps because ages differ dramatically. However, there is less debate among the Positives about conservation. Since the Positives believe that they will always be around, they are a far-sighted lot.

Grades of immortality

Although the Positives do not die, they are vulnerable to a disease that is reminiscent of death. After infection on day 0, the sufferer of Square disease only wakes on the squared numbered days: 1, 4, 9, 16, 25, etc. Since the squares become rarer and rarer along the number line, the sufferer has longer and longer bouts of unconsciousness. There is no largest square, so the disease does not lead to permanent loss of consciousness. But the intervals of unconsciousness become larger without limit.

The gaps associated with Square disease prompt some healthy Positives to become dissatisfied with the discreteness of their existence. There is always a next moment but there is nothing between the moments! They complain that their existence is covertly intermittent. An individual who lives on the model of positive integers is like a trombone that spends most of its time disassembled. They pity themselves like those who believed that they only have Zeno-style 'veiled immortality'.

When the restless Positives reflect on the real number line, they feel that their lives are mostly empty. The set of non-existing moments is a higher order of infinity than the set of existing moments.

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Their stoical neighbours say restless Positives should be thankful for what they have. At least they have all the moments corresponding to the positive integers.

The restless Positives reply that the gratitude is misplaced. Their moments of existence just form a substrate for their grotesque incompleteness. The only limit to the absurdity of their lives is a metaphysical limit: a shirt cannot be all holes. There is an upper bound to how riddled something can be.

Aubrey de Grey Positive has a life-extending scheme to make halfway points available.[29] Life would then run: 1/2, 2/2, 3/2, etc. He thought future scientists could even extend life to include every third-way point.

Lucretius Positive belittles life-extension. No matter how many fractions one added, the sum would be dwarfed to insignificance by the cardinality of the real numbers. Cantor's diagonal argument puts the positive integers into a one to one correspondence with the rational numbers (which includes all the fractions). Therefore, the cardinality of the rationals is no greater than the cardinality of the positive integers. The rational number line leaves out the irrational numbers. Their cardinality is at the next highest order of infinity.

Moses Positive prophesized that their local time would one day encompass the irrational numbers. The Positives will be transformed into Irrationals. The faithful will be spending their higher order infinitude in bliss. The infidels will suffer.

The prospect of superdenumerable hell frightened many Positives. The new religion demanded worship every Sunday. Blaise Pascal Positive argued that it was rational to believe in Irrationalism. If Irrationalism is true, then the believer merits superdenumerable heaven and the nonbeliever suffers superdenumerable hell. If Irrationalism is false, then the believer loses denumerably many Sundays and the non-believer keeps his Sundays.

Since many of you picture the Positives as living in heaven, you may be surprised that Blaise Pascal Positive urges them to abandon it for the slight chance of an infinitely better alternative. You will be tempted to point out that Georg Cantor also proved that there is no highest order of infinity. Thus Pascal finds no stable premises for his Wager.

[29] Your Aubrey de Grey is a geneticist at Cambridge University dedicated to extending the human life span to 1000 years. See his 'Foreseeable and more distant rejuvenation therapies', in *Aging Interventions and Therapies*, Suresh I.S. Rattan (ed.) (Singapore: World Scientific, 2005), 379–395.

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This is just the sort of objection that Epicurus Positive is fond of. He regards Positive religion as a side-effect anxiety about gaps. His aim is to cure this fear by exposing its illogical basis. He denies there is a time when you are harmed by a gap in your existence. A gap cannot harm you before it occurs. That would be reverse causation. You cannot be harmed during a gap. You do not exist during a gap. Nor are you harmed after the gap. For the gap no longer exists.

Summary

I now sense that my medium wearies. I shall review my main points before departing.

Although people understand 'All men are mortal', this understanding is weak because they have a poor understanding of 'Some men are not mortal'. Some intellectuals try to parlay this poor understanding into scepticism about the possibility of immortality. If immortality can be shown to be impossible, then desire for it would be pointless. But the impossibility proofs for immortality are fallacious.

Human immortality is possible. I do not mean 'possible' in the epistemic sense ('possible for all we know'). 'All men are mortal' is known by more than care to admit it. What I mean is that immortality is metaphysically possible. It is not ruled out by necessary truths. Consequently, human beings are rationally disappointed by their mortality. Nothing *a priori* foretells this limit. Human beings learn the bad news empirically. They are rightly frightened by it. Their well-founded horror triggers psychological defence mechanisms.

Could the news be worse? Yes, the human beings could learn that their *species* will go extinct. Aristotle believed all men are mortal but believed mankind will go on forever—and that mankind has always been around. Biologists have exposed this solace as an overestimate on both ends. *Homo sapiens* is a species among other species, all of which have a beginning, all of which have an end.

Could the news be still worse? Yes, the human beings could further learn that everything else they cared about, the pyramids, the earth, and the stars will all be obliterated, that everything will be scattered, reduced to dust, and then even that dust reduced. That is the grim lesson taught by their astronomers and physicists.

Happily, human beings also care about temporary things: the thrill of a roller coaster, ice sculptures, a leisurely cup of coffee

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after breakfast, conversation, sunsets, and so on. Failure to enjoy such ephemera is a sign of illness. All healthy human beings retain the foundation for a happy life.

Blaise Pascal and the promoters of paradise threaten this foundation. They belittle ordinary goods. They decry the bittersweet resignation that is the rational response to overwhelming evidence for one's mortality. They rub in the bad news and sabotage the consolations available to mortals. For they wish human beings to sacrifice attainable goods for a chance at an infinite hereafter.

In Aesop's fable, the fox concludes that the grapes are sour after learning that he cannot have the grapes. Bernard Williams is a fox when he says immortality would necessarily be a bore and when he says immortality would undermine the meaningfulness of existence. Bernard Williams, Søren Kierkegaard, and Friedrich Nietzsche make mistakes about the inevitability and unwelcomeness of repetition.

It is true that immortality can be very bad. The Greeks appreciated this in their tales of the perpetual torments of Prometheus and Sisyphus. It is true that immortals face problems unlike mortals. It is also true that some of the problems faced by immortals bear instructive resemblances to those faced by mortals. Even so, the Greeks were right to envy the gods.

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