# Infinitely Long Afterlives and the Doomsday Argument

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**Abstract**
A recent book of mine defends three distinct varieties of immortality. One of them is an infinitely lengthy afterlife; however, any hopes of it might seem destroyed by something like Brandon Carter's 'doomsday argument' against viewing ourselves as extremely early humans. The apparent difficulty might be overcome in two ways. First, if the world is non-deterministic then anything on the lines of the doomsday argument may prove unable to deliver a strongly pessimistic conclusion. Secondly, anything on those lines may break down when an infinite sequence of experiences is in question.

In *Immortality Defended* I argue for immortality in three distinct forms.[1] One is the 'Einsteinian immortality' of being part of an eternal reality. At times when people correctly say you are dead, you are nevertheless alive 'back there along the fourth dimension' inside a whole which has what Einstein called 'a four-dimensional existence'. Einstein viewed this as something shown by his theory of relativity. As he made clear when discussing his dead friend Michele Besso, he found it comforting. Besso's life had not been annihilated, rendered non-existent, in any absolute fashion. Compare how a life wouldn't be rendered non-existent through being positioned in what was, relative to people in Great Britain, a distant land such as Canada.

The second form of immortality is strongly suggested by quantum physics. Here calculations give the wrong results unless you accept, for instance, that sometimes a single particle can be in two places at once like a saint in some medieval tale. Many quantum physicists picture the universe as a whole whose existence is fully unified.[2] Its parts are no more capable of existing independently than, say, the red 'part' and the blue 'part' of a cherry's purpleness. But if a single, fully unified whole is what carries the patterns of events throughout the universe, then this unified whole lives the lives of

[1] Oxford: Blackwell (2007).
[2] See, for instance, D. Bohm and B.J. Hiley, *The Undivided Universe* (London: Routledge, 1993).

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everybody and will continue to live other lives when any particular life has ended. Doesn't this give you immortality of a sort, even if not immortality for your very own personality? Hindus, remember, often picture Brahman as living the lives of everybody. They then find nothing too disturbing in the prospect that their own personalities will eventually be lost. The cosmic mind that lived their lives would continue onward for infinite time.

Finally, there is immortality of a third kind, the immortality of an afterlife.

An afterlife is an absurdity, I suggest, unless you believe in a divine reality of some sort; in turn, belief in any sort of divine reality can well seem absurd; however, it can become plausible when you accept a Platonic creation story, in continuation of a long philosophical and theological tradition. Start by accepting that ethical requirements for the existence of good things aren't always just *moral* requirements for good *actions*. Next theorize that ethical requirements, when not overruled by other, stronger ethical requirements, could themselves ensure the existence of the required entities: for instance, of pantheism's infinite mind, a mind inside which we may exist and may have infinitely lengthy afterlives.[3] But here Don Page, a well known cosmologist, points to a possible conflict with the 'doomsday argument' that I have defended in many places.

The doomsday argument, which Page calls 'basically valid', is a statistical argument first developed by another well known cosmologist, Brandon Carter. Carter considers it a fairly straightforward application of his Anthropic Principle—of obvious importance in cosmology—that observers should take into account when and where observations are most likely to be made. [Presumably not deep inside stars, for example, or at times when hardly any observers exist.] I championed the doomsday argument briefly in *Universes*,[4]

[3] For the Platonic creation story and the pantheism to which it can lead, see *Immortality Defended* (Oxford: Blackwell, 2007) or these other writings of mine: 'Our Place in the Cosmos', *Philosophy* 75 No. 291 (January 2000), 5–24; 'The Divine Mind', pp. 73–89 of *Philosophy, the Good, the True and the Beautiful*, A. O'Hear (ed.) (Cambridge: Cambridge University Press, 2000); and *Infinite Minds* (Oxford: Clarendon Press, 2001). That there's no logical absurdity in the idea that ethical (or, to use a philosopher's term, 'axiological') requirements are themselves responsible for the existence of something, perhaps a divine mind or perhaps a universe, has been accepted by leading philosophers and theologians of modern times: for instance A.C. Ewing, Hans Küng, J.L. Mackie, Nicholas Rescher, Derek Parfit, John Polkinghorne and Keith Ward.

[4] London: Routledge (1989). For the doomsday argument, see p. 214.



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then in several papers and in *The End of the World*,[5] and most recently in *Immortality Defended*. In a nutshell: Were the human race to become extinct shortly, roughly ten per cent of all humans would have lived when you did; were it instead destined to spread throughout its galaxy, then ultimately perhaps far fewer than one in a hundred thousand humans would have lived at that early time; the commonsense principle that you should, prima facie, view your observations as fairly ordinary, not wildly unusual, now suggests that —unless (oddly in view of nuclear bombs etcetera) you started off supremely confident in a long future for humankind—you ought to come to believe that, fairly probably, humans will fairly soon be extinct. Bayesian calculation of probabilities could help show it.[6] You should think twice before accepting that inside the total temporal span of the human race, past, present and future, you exist at a point *very extraordinarily early* as measured by a clock ticking whenever a new human is born.

Here is an analogy that many have found persuasive. We have detected no signs of extraterrestrial intelligence. A first possible reason is that intelligent species regularly destroy themselves soon after they learn how to produce planet-wide environmental destruction. A second is that, although about a hundred thousand intelligent species will eventually have evolved in our galaxy of roughly a hundred billion sun-like stars, our species will have been the very earliest; now, is *that* plausible? To many folk it isn't. The doomsday argument ought then to make some sense to them, for it simply shines the same harsh light on the theory that you and I are very exceptionally early among all humans who will ever have been born.

The protest 'Any humans of the far future aren't alive yet, so how could their existence in vast numbers possibly make my temporal position unusual?' could well seem weak: weak in a way having nothing to do with whether the world *exists four-dimensionally*. For what if situations instead flow into and out of existence moment by moment, which Einstein considered sheer illusion? When human

[5] Among the earliest of the papers are 'Is the end of the world nigh?', *Philosophical Quarterly* 40, No. 158 (January 1990), 65–72; 'Time and the anthropic principle', *Mind* 101, No. 403 (July 1992), 521–540; and 'Testing the doomsday argument', *Journal of Applied Philosophy* 11, No. 1 (1994), 31–44. In *The End of the World: the Science and Ethics of Human Extinction* (London: Routledge, 1996) see particularly 187–264, plus the Preface to the paperback edition of 1998; in *Immortality Defended* see 13–14.

[6] J. Leslie, 'The doomsday argument', *The Mathematical Intelligencer* 14, No. 2 (Spring 1992), 48–51.



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history ends, won't it nevertheless be true that if all humans had betted they were in (for instance) what would turn out to be the earliest millionth, only one in a million would have won their bets?

In e-mails to me Don Page reasons that the doomsday argument could be a severe threat to any belief in afterlives, or at least in very lengthy afterlives. If somebody's life were destined to end with his or her earthly demise then any observations made by that person would be made within about a century of his or her birth; in contrast, as parts of a mental life belonging to that person and destined to extend for infinite time, observations made during that period of about a century would be *very, very extraordinarily early* observations; so may not reasoning closely similar to the doomsday argument smash all hopes of an afterlife that continues onward infinitely?

One might reply in two ways.

First, the doomsday argument works smoothly only if the universe is deterministic. In a non-deterministic universe there is either no fact of the matter as to just what the future holds *or else*, supposing that—like me—you accept the Einsteinian picture of Time, there is at least no fact of the matter whose nature you could guess with the help of any smoothly running doomsday argument. See the discussion in *The End of the World* of the thought experiment in which successive batches of people, each ten times larger than the batch before, pass through a room until two dice fall double-six; everybody in the room is then shot. If how dice behave is genuinely non-deterministic then, paradoxically, you can expect to get out of the room alive although recognizing that the large majority of those ever entering it will be shot. No matter how you picture Time, you should estimate your chances of being shot as only one in thirty-six.[7] The moral is that statistics such as can make the doomsday argument so alarming are, in the absence of determinism, less able to deliver harsh conclusions than one might think. In a genuinely non-deterministic universe the most that can be said is that the doomsday argument works *almost* smoothly, giving strong grounds for decreased confidence, when it is directed against great confidence that humankind will have a long future: confidence, that's to say, that the long future is *almost as good as* determined. Well, suppose that whether you will have an infinitely long afterlife depends on how you are going to use libertarian, radically non-deterministic freedom between now and your earthly demise. The wicked get a few years and then extinction; the virtuous continue onward for infinite time. You could feel compelled to reject

[7] For this Shooting Room case, see pp. 235–236 and 251–256 of *The End of the World*, and also xvii–xviii of the Preface to the paperback edition.



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complete confidence (which would be classifying your future virtuousness as *exactly as good as determined*) that you will use your freedom well enough to earn the afterlife; but even so, you could think you hadn't too bad a chance of it. The chance would not be infinitely small, which is what it might seem were the situation deterministic instead.

All of that could be worth considering although I am myself no friend of afterlives that must always be earned by correct use of libertarian freedom. I even accept (as do quite a few quantum physicists) that the universe could be thoroughly deterministic, dice and virtuous decisions and all.

The second possible reply is that *The End of the World* takes a wrong turning when its pages 263 and 264 react to Andrei Linde, yet a third well known cosmologist. Linde's idea, page 263 explains, is that the doomsday argument fails because, as he thinks very feasible both cosmologically and technologically, the human race will exist for infinitely long. While humans might come to look very different from humans of today, they would continue to be worth calling humans. It follows that no matter how many years separated a human from the start of human history, this human would always be (in a readily understandable sense) *an infinitely early human*. On Linde's way of thinking, any human existing within a few hundred thousand years of the very first human could be no more remarkably early inside humankind's total span than a human existing a trillion trillion trillion years afterwards. Well, page 264 presents a counterargument I have come to think erroneous.

The counterargument is that people should compare 'how early their own positions would be if Linde's theory *weren't true* with how early they would be if it *were*. In the second case, their positions would be in a sense infinitely early; in the first case, not. This gives superbly strong probabilistic grounds for rejecting the theory.'

I now think this counterargument a mistake. Granted, the second case would involve what could be called infinitely early positioning; the first case would not; but Linde's point is that neither case would involve anything statistically unusual. Sure enough, being inside the first few hundred thousand years of human history would fail to make you statistically unusual if humankind's entire span, past, present and future, were not much more than those few hundred thousand years. However, being inside the first few hundred thousand years of human history would likewise fail to make you statistically unusual if humankind had a span of infinitely many years. True, it would place you inside an infinitely small initial fraction of that span. But Linde's point is that absolutely any



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positions within that span would be inside infinitely small initial fractions thereof, so how could any of them be statistically unusual? If a girl stands on a line starting at your feet and extending to infinity then she is infinitely close to you, proportionately to the length of that line, regardless of where she stands. Standing a trillion trillion trillion miles distant from you, she still stands inside an infinitely small initial fraction of the line. Why ever did I miss the importance of this?

Or is it that the point hasn't the importance I now see in it? Don Page considers that confidence in a long future for humankind, or else for oneself in an afterlife, ought to grow smaller and smaller as the length of that supposed future increases. My reply is that considerations akin to the doomsday argument can make it more difficult to believe in an afterlife lasting roughly a million years than in one lasting only about a thousand years; they can make it still harder to believe in an afterlife lasting roughly ninety billion years; yet, paradoxically, they do nothing to erode confidence in an afterlife lasting infinitely many years, for Linde's reason. Page, though, finds the paradox impossible to swallow.[8] And when the infinite is central to a dispute, it can be difficult to be sure who is right.

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[8] See his 'Scientific and Philosophical Challenges to Theism', forthcoming in Melville Y. Stewart, (ed.), *Science and Religion in Dialogue* (Oxford: Blackwell).



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