



# The inexorability of immortality: no need for God?

## Uunngåelig udødelighet uten Gud

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### Abstract

In this paper, I aim to show that a certain form of immortality, without the need for any intervention from a supernatural being, is almost inevitable for human beings. I take a physicalist starting point: I am a certain configuration of physical particles. Thus, if these particles were reassembled in the same configuration, I would necessarily come back into existence. I address a number of objections raised against this prospect by Eric T. Olson, who argues that the reassembly of such particles following their dispersal after death would be simply impossible, and that if it did occur, it would necessarily be a mere replica rather than the real 'me'. I suggest that the random redistribution of particles can be thought of as the throw of cosmic 'dice'. With any specific throw, the likelihood that it yields the particular configuration that constitutes 'me' is vanishingly small. But over infinite spans of time, this likelihood increases until it becomes a near certainty. I show that even if this reconfiguration lacks the same causal features as those that gave rise to the original me, this cannot imply that the reassembled me is a mere replica. I acknowledge that my conjectured form of immortality may be unappealing to theists and non-theists alike. I also note that it rests on a linear conception of time, which may not harmonise with current thinking in physics. However, these issues notwithstanding, my conjectured version of immortality is at least as inexorable as many other things we take for granted, which also rest on potentially flawed beliefs about the nature of time and space.

### Keywords

Immortality, physicalism, reassembly, probability, personal identity, physics, infinity

### Sammendrag

I denne artikkelen vil jeg vise at en form for udødelighet er så godt som uunngåelig for oss mennesker, uten behov for guddommelig inngripen. Jeg legger til grunn at fysikalismen er sann; jeg er en spesifikk sammenstilling av fysiske partikler. Det innebærer at hvis disse partiklene igjen ble sammenstilt på eksakt samme vis, vil jeg nødvendigvis komme tilbake til livet. Jeg imøtegår flere innvendinger mot dette forslaget fra Eric T. Olson. Han argumenterer for at partiklene umulig kan kombineres igjen når de først er spredd etter døden og at hvis det kunne la seg gjøre ville resultatet uansett ikke være den ekte meg, men en kopi. Jeg foreslår at vi kan forstå den tilfeldige fordelingen av partikler som kast med kosmisk terning. For hvert kast er sannsynligheten forsvinnende liten for at resultatet er meg, men over en uendelig tidsperiode vil sannsynligheten øke til utfallet blir så godt som uunngåelig. Jeg viser at selv om den identiske ansamlingen av partikler har andre årsaker enn de som skapte den originale meg, betyr ikke det at den bare er en kopi. Jeg anerkjenner at den denne formen for udødelighet trolig ikke vil appellere til verken teister eller ikke-teister. Jeg vil også understreke at forslaget hviler på en lineær tidsoppfatning, som nok ikke stemmer overens

med rådende oppfatninger i fysikkfaget. Den versjonen av udødelighet som jeg foreslår her, er imidlertid like uunngåelig som mange andre ting vi tar for gitt, som også hviler på potensielt feilaktige oppfatninger om tid og rom.

Stikkord

Udødelighet, fysikalisme, rekonfigurering, sannsynlighet, personlig identitet, fysikk, uendelighet

There is dispute among philosophers as to whether immortality is compatible with a physicalist account of personal identity. Even for theists, there are problems that face the physicalist proponent of immortality. If we suppose that God reassembles particles to make up a specific individual (what has been termed the ‘naïve reassembly model’; Mooney, 2018, p. 274), it seems to open the possibility that God could make two such reassemblies, calling into question which is the ‘real’ person. It is certainly challenging to think about what might happen in the event of a duplication of this sort. But if reassembly is possible, or perhaps even inevitable, the fact that it challenges our concepts of personal identity, or even the idea of physicalism itself, is something that simply has to be grappled with. That is, those who dismiss the ‘naïve reassembly’ model are starting from the assumption that God cannot do anything that would clash with our concepts of identity.<sup>1</sup>

What would happen if we took a non-theistic approach to the reassembly model? Here, there may be a difficulty, since many philosophers take it for granted that only a supernatural being could confer the kind of immortality that arises from reassembly. This is the argument made by Eric T. Olson in *Life After Death and the Devastation of the Grave* (2015). In this paper, I will show that one does not need to posit a God in order to regard immortality as being possible from a physicalist perspective. God, in fact, is a hindrance to the naïve reassembly model of immortality. Because those who discuss him do so in a speculative way, his actions and freedoms are subordinated to our assumptions about how the world works. If we start, instead, with the way the world works, we may find that the naïve reassembly model is simply a fact about the world. If the implications of this conflict with our current understanding of physicalism or personal identity, perhaps it is these that should give way, rather than the reassembly idea. Thus, the aim of my paper is to show that the naïve reassembly model is both plausible and possible without any need for God’s intervention, focussing primarily on the arguments made by Olson, who specifically discounts the possibility of immortality by reassembly.

I should clarify here that I do not have space to enter deeply into theories of personal identity, or arguments for or against physicalism itself. My argument is premised on a basic account of physicalism; ‘everything is physical’ (Stoljar, 2017) in relation to personal identity. Thus, I take the following to be true: “For every conscious property C there is some physical or functional property P such that C=P” (Sundström, 2018, p. 681)

Conscious properties may include a sense of being oneself, memories, as well as the usual thought processes etc. If physicalism is false, all bets are off concerning immortality, and in any case reassembly is not needed in order to achieve it. But given a physicalist understanding of personal identity, as Olson assumes, immortality is either feasible, likely or inevitable, depending on our assumptions about the nature of time and the universe, as I will go on to show. The one thing it is *not* impossible.

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## 1. Olson's argument

Olson argues that, given a physicalist account of personal identity, any form of immortality would require the reconstruction of the physical body following death. He then claims that such 'radical resurrection' could not, in any case, result in immortality. He uses the analogy of the Colossus of Rhodes to illustrate this point (Olson, 2015, p. 415). After its destruction in an earthquake, the components of the statue rusted away, were melted down for other uses, and otherwise dispersed. One could, of course, construct a new statue, but it would be questionable whether we could call this 'the Colossus' since its history would be very different. Even if composed of the same materials, it would not obviously be the 'same' Colossus. Olson goes so far as to claim that *even God* could not recreate the Colossus. If God searched out each original component, and reassembled them in precisely the same way, this would be nothing but a reconstruction according to Olson: "nothing once totally destroyed can ever exist again" (Olson, 2015, p. 422).

Olson's key concern is that any form of immortality we embrace from the physicalist perspective has to contend with the fact that we are ephemeral creatures. We die, and our bodies decompose. Olson's prose dwells with seeming relish on the terms 'destruction', 'decay', and 'dissolution'. "Wait long enough" he says, and what previously comprised a living human body will be merely "atoms scattered at random across the void" (Olson, 2015, p. 410). The challenge for those who would argue for immortality is to do so in ways that embrace the annihilating power of death. This is what I attempt to do here. However, in order to tackle this problem, it is necessary to unpick a knot in Olson's argument.

Olson conflates death with **irreversible** destruction. This serves his argument in a circular sense. If a body is successfully reconstituted, it never *really* died. And if it *did* die, then by necessity any reappearance is merely a replica. It cannot be the original, since the original was irrevocably destroyed. If we want to go beyond the circularity of Olson's claim, therefore, we need to ditch his 'irreversibility' criterion. Accordingly, my approach takes it that death and immortality are not self-contradictory. My definition of death may be anything we want: cessation of heartbeat, decomposition, dispersal of molecular components... In short, everything included in Olson's argument, except the word 'irrevocable' or similar terms that 'bake in' the very conditions that are necessary for Olson's conclusion.

## 2. My conjecture

Currently, I am alive. Let us assume that my present state is one that is purely physically determined. My identity, my consciousness, memories and anything else pertaining to me can be explained in purely physical terms. There is nothing supernatural about any of it. At some point after writing this paper, I will die. I might be killed in the way that some of the victims of Hiroshima were, leaving no discernible physical trace whatsoever. More likely, I will leave behind a physical body, which will disintegrate slowly if buried, or quickly, if cremated. Eventually, as Olson notes, what was once me, becomes "atoms scattered at random across the void" (Olson, 2015, p. 410).

Our current level of technology and understanding provide no conceivable way of collecting all of these particles up again. Even assuming a very impressive improvement in our technological skill, it would require a combination of enormous resources, astonishing technological skill and bizarre motivations to identify the relevant particles, travel through the universe to capture them *and* to reconfigure them exactly as they were while I was alive. A person with such powers and/or motivation would perhaps be close to what Olson

regards as a supernatural being. And without such a being, how could it possibly ever be the case that I could be reconstituted?

To answer this, it is necessary to think about time passing after my death. As noted, with the increasing passage of time, the components that made up my body will disperse further and further through the universe. The more time that passes, the further dispersed those components will be. However, beyond a certain point this is no longer true. Over vast expanses of time, the probability that two or more of ‘my’ atoms chance to meet becomes higher. Let’s suppose that a cluster of them eventually reconvene. Of course, this is very unlikely, and so what if they do reconvene? They will only disperse yet again.

But over yet greater stretches of time, the likelihood that ‘my’ components meet becomes not smaller, but larger. In fact, as the time period extends towards infinity, the likelihood begins to approach certainty. Here, we encounter some questions about probability and time. Depending on the answers to these questions, my argument proves either that it is possible that I will re-exist at some point, that I am likely to re-exist, or that I am certain to re-exist. Either way, it undermines Olson’s claim that immortality is impossible without the intervention of a supernatural being.

### 3. Probability and infinite time spans

It is widely agreed that the probability of any event  $x$  approaches certainty, given infinite time, hence the pervasiveness of the meme that a given number of monkeys typing at random would eventually produce the complete works of Shakespeare (Eddington, 1928, p. 59; Clausing, 1993). If this is true, low probabilities become irrelevant. Given infinite time,  $x$  will almost certainly happen (Garvin & Gharrett, 2014). Naturally with our human-scale faculties of reasoning and prediction, it seems vastly improbable to suppose that the physical components that make an individual would reconvene. In our lifetimes, such a happening would be so unlikely as to make us feel justified in regarding it as impossible. But infinite spans of time present us with a very different picture. The event that we first felt justified in describing as impossible, becomes possible, likely, or almost certain.

We can illustrate this with an analogy. For any specific throw of a dice at time  $T$ , the probability of throwing a 6 is  $1/6$ . We would not expect to have to continue throwing the dice for all that long before we get a 6. The chances of a complete regrouping of my physical components is of course vastly less likely than the chance of getting a 6 with the toss of a dice. But there is a parallel here. We can regard each passing second as a ‘throw’ of the cosmic atomic dice. There is a particular ‘throw’ that will result in... me.

Of course, if something is clearly impossible, it will not happen however much time one gives it. In this category, depending on one’s religious stance, one might include supernatural occurrences of the type that Olson talks of. That is, if God’s existence is the result of supernatural machinations, God will never come into existence, even given infinite time. But the scenario I am describing is *perfectly possible*. It is just breathtakingly unlikely at any given time. However, if we accept the fairly uncontroversial premise set out above, then the form of immortality I am talking about becomes not just a likelihood, but a certainty (provided we accept the idea that time is infinite; I will discuss this further in a later section).

### 4. Causal connectedness

As I have noted, any reconfiguration of me would be a replica, according to Olson. This is partly because it would not share my causal history. Its mode of coming into being would be

very different. But is this really the case? Why should my history, or the cause of my existence, really matter here? In his analysis, Olson seems to draw on a kind of hybrid account of personal identity. We can see this in his discussion of the Colossus. It is very difficult – if not impossible – for us to recreate even artefacts, let alone living organisms. But how should a physicalist respond to this apparent problem in my account of immortality? For Olson, if I genuinely died, my reassembled self is a mere replica *even though it is physically identical*.

However, it is not clear that a physicalist is justified in insisting on these causal or historical features before acknowledging that the two individuals are indeed the same. A physicalist might well acknowledge that the history of a particular artefact or organism is different from the ‘original’. But as suggested earlier, this is not what matters from the perspective of personal identity or consciousness, which is given by physical properties rather than by historical antecedents (Papineau, 1995, p. 259). Thus, if the configuration is physically accurate, we can concede that my history as a *reconfiguration* is different from that of my original self. But it doesn’t make me a different person. If my consciousness and perception, my thoughts and feelings, are the product of physical configuration, I will feel and think the same way *regardless* of how that reconfiguration came into being. Bear in mind here that the circumstances of creation/reconfiguration are not accessible to us through our perceptions or recollections. Of course, narratives of creation, conception, begetting etc, are important. But to suppose that these are a necessary component of our identity *and* that we can call ourselves physicalists, is unconvincing. My argument here is that if our consciousness and perception of continued identity is intrinsically tied in with a particular physical configuration, the perception of continued identity will arise whenever that specific configuration is recreated. From a number of other philosophical perspectives we might argue that this is not the same person, or that they are a mere replica. But from the subjective, first-person viewpoint of the reconfigured person, they would believe and experience themselves to be the same.

A further point here is that a large part of Olson’s concern emerges from the fact that his argument is directed against theistic accounts of immortality. If we suppose that when I am resurrected, God carefully reconstitutes the configuration of molecules that constitutes me, this certainly seems significantly different from my previous mode of coming into existence, which (I take it) involved going through a process of organic development from an embryo, foetus, infant, child, etc. However, on my account, we do not need to assume that God engages in any direct intervention over matter in order to bring me back to life. Nevertheless, the differences between an organic beginning to one’s life and a kind of cosmic flashing into existence at the moment a certain configuration of molecules arises might seem to pose some difficulties even for the non-theistic approach. Could an adult ‘me’ that flashes into existence in this way really be the same me who developed from a foetus into the adult I currently am now?

Olson would deny that this is possible: “A thing has to cause itself to continue existing” (Olson, 2015, p. 422), he claims. In this way, he can distinguish between the ‘real’ version of me, which is generated by a long chain of connected events, arguably from conception onwards, and the ‘replica’ which is the version that flashes into existence following an utterly different sequence of events. Here again though, Olson seems to insist on the necessity of a criterion which is not clearly compatible with a physicalist understanding of personal identity. That is the ‘self cause’ requirement, which rather springs out of nowhere in his discussion.

But in any case, even if we accepted Olson’s contention, there remain some problems for him to deal with. Firstly, we tend to believe, of course, that we are indeed the product of a

long chain of organic development. But if our beliefs and states of mind are entirely the product of our physical configuration, these beliefs are not necessarily based on facts. At the moment I think that after my conception I followed a fairly typical biological path towards adulthood. But it is possible, given my view of immortality, that I am *at this moment* a reconfigured version of myself, sharing, of course, the thoughts, beliefs and memories of my physical predecessor. What matters for me is not whether in fact I flashed into existence a few seconds ago, but the fact that I experience an ongoing sense of continuity, which of course I must do, since if I were not physically identical with my previous self, I would not *be* that self.

The point here is that cosmic reconfiguration would not necessarily conflict with our *experience* of ongoing personal identity, nor with our perception of the history and narrative of our past. Factually it may be wildly different (although not necessarily so, as I have suggested). But – as physicalists – these facts need not concern us except insofar as they lead to different physical manifestations. And as I have shown, I am talking only of situations where the configuration is absolutely and exactly identical.

A final observation here is that there is nothing in my account that necessarily precludes conception, birth, childhood, and a gradual development towards adulthood as a component of immortality. If we wanted to be ultra-strict, in accordance with Olson's requirements, we could simply say that any other reconfigurations that *appear* to be me, and that *perceive themselves* to be me, are *not* me unless they have gone through the process of conception, birth, etc.

## 5. Particles or configurations?

I have referred in this paper to particles as being the physical components which comprise a person. Olson refers to atoms. Perhaps we might alternatively think that molecules are the most important component of physical human identity. Genes are popularly thought to be crucial in determining identity – and genes are components of the DNA molecule. So what is it that is reconfigured in my account?

One way of thinking of physical identity is to locate its essence in the *particular and specific* components that comprise me. Thus, to return to Olson's example of the Colossus, it would not be enough to obtain some bronze and stone of the same type used in the original; obtaining the *same* bronze and the *same* stone would be necessary (though not sufficient for Olson) to recreate the statue. Similarly, in order to recreate me, one would not simply need to reassemble the physical building blocks (whatever we decide them to be – atoms, molecules, etc). But we would need to obtain the self-same particles that made up the original me.

If we do agree that the same particles are required, as well as the same configurations, this seems to raise a number of problems. In his discussion of Olson's rejection of the 'radical resurrection' possibility, J. Mooney notes that – as more people come into existence, more of 'our' components are likely to have played a role in other people's lives. If I look for 'my' particles in order to reconfigure myself, I may have to compete with other contenders for immortality whose physical existence also requires those particles (Mooney, 2018). Thus, we cannot expect that everyone will be immortal at the same time. This, of course, is a serious problem for theistic accounts of immortality. It is not pleasing to think that God would have to pick and choose among the deserving, to decide who gets to have the shared particle. But for my secular form of immortality, it does not matter at all. Not everyone will get to be immortal at once – we can take turns. Nor does it have any intrinsic reason to harmonise with our ideas of fairness.

Mooney raises another issue in connection with the ‘same particles’ requirement: what if one person consumes another so that *all* of the first person’s particles are absorbed by the eater? One might wonder whether the cannibal is really destined for theistic immortality; but setting this question aside, it is clear that for me, there is no problem at all. Both the cannibal and consumed person can be reconfigured; they may not be able to co-exist, but there is no reason why each should not re-emerge periodically as time progresses.

Clearly, although the ‘same particles’ requirement is extremely demanding, it works rather better in my version of immortality than in the theistic one. Thus, if we were to settle on this requirement as a necessary component of personal identity, it would not pose an insurmountable problem for me. Nevertheless, the ‘same particles’ requirement seems to me simply implausible, irrespective of whether we are thinking about immortality. This is largely because we already know that there is considerable exchange of material during the course of an individual’s lifetime. To tie personal identity too closely to individual, specific atoms, seems thus to suggest that we do not keep the same identity over a lifetime. Some would argue precisely this, and I would not necessarily disagree with them. However, from the physicalist perspective, a continuous personal identity based on physical configuration is necessary. And if this is the case, it cannot be that the specific atoms themselves, for example, are a prerequisite, otherwise the notion of personal identity falls by the wayside during a single individual’s lifetime, before we even start thinking about immortality.

A more convincing understanding is that there is some *pattern* in the underlying physical components that constitutes my identity. That is why some (or on some accounts, *all*) of the physical components of my body can be replaced over time, without it meaning that I have died, or become a different person. If my existence/identity is not contingent on those particular atoms/molecules, but simply on a *pattern* that they form, I would not need to ascribe particular importance to the individual parts themselves, but would have to acknowledge that if that pattern were reconstituted, it would be me, irrespective of where the component parts came from, or whether they had been involved in the original ‘me’.

This ‘configuration’ view is also more in accordance with what we know of genetics. Many people take it that genes are crucial in determining identity. Therefore, what matters is not so much any particular particle or set of particles, but their configuration in a particular genetic pattern. I should say here that this is clearly not the whole story, since we do not regard identical twins as being the same person, despite the fact that they share a genome (Robertson, 1997, p. 1412). Therefore there must be other patterns, perhaps configurations of neurons, perhaps certain gut flora, that also play a part in constituting our identity. It is not my intention to delve into these questions here, nor is it necessary for my argument. It is sufficient for me that the physicalist must accept the idea that personal identity is linked to a specific configuration of physical particles which as yet we do not fully understand.

If we accept that personal identity is physical, but reject the ‘same particles’ requirement, then my identity at the moment is based on a configuration of molecules, genes or atoms. Should this exact configuration recur after my death, I will again exist. This means that my genes will be identical – since they are composed of physical material. And all the elements of my consciousness and memories that make me myself will also be identical, since they are also composed of physical material, according to the physicalist. Thus, if it is true to say of me now that I am me on account of certain arrangements of physical particles, it will be equally true in the future when these particles are arranged in the same way, to say that I am – again – me.

## 6. Replicas and duplicates

As I have noted, for theists, it is important that immortality should make *theological* sense. The idea that immortality might be unpleasant, meaningless or momentary, is both unappealing and incoherent, if we suppose that it is the means by which a benevolent and omnipotent God rewards us. If I enjoy eternal life in paradise, it is because I am the same person as the one who, in the Earthly realm, abstained from committing sins. This requires not just the conviction that the person in paradise is *me*, so that personal identity has been preserved, but also that we can make sense of the idea of that person maintaining a kind of moral connectedness with her Earthly self. She is reaping her own rewards, not someone else's. And when I abstain from sin on Earth, it is so that *I* can benefit from unending joy, not so that someone else can.

As I am not claiming that my form of immortality makes any sense from a theological perspective, I do not have such a complex task ahead of me in showing how this kind of moral responsibility can transfer from one world to the next. Yet for my view of immortality to work, it must be plausible that that the later me is really *me* and not a replica.

I think this is actually a very easy question to answer. Let me set it out here:

- a. The person I am now is indisputably me.
- b. There is a particular configuration of particles that is sufficient for my current existence and identity.
- c. It is almost inevitable that this specific configuration of particles will arise again, given infinite time.

*Therefore:* it is almost inevitable that I will come back into being, given infinite time.

The person who refuses to accept the conclusion cannot consistently agree with the first two premises above. If the exact combination of physical particles that makes me *me* at T1, does *not* make me at T2, then at T1 there must have been some difference that is not ascribable to purely physical phenomena. This is an inescapable bind. Olson's rejection of the possibility that the person at T2 is the same as the one at T1, rather than disproving immortality per se, in fact undermines the plausibility that his argument really engages with a physicalist approach.

There are, of course, many ways in which physicalist accounts of personal identity can be attacked, or ways in which personal identity can be explained without insisting that it *has* to be purely physical. Thus, for anyone who subscribes to another philosophical understanding of personal identity, my account of immortality will not be compelling. But for those such as Olson who profess to refute the possibility of immortality from a physicalist perspective, it is simply unsatisfactory to claim that T2 is necessarily a replica, unless there are additional reasons to think this is the case.

One such additional reason might be the simple fact that – in my account – two such configurations could occur simultaneously. This is the downside of dismissing the 'same particles' requirement. If any set of particles can in theory be configured to the pattern that forms me, it opens up the possibility that two or more of 'me' could come into existence at once. If we would not want to admit that co-existing identical people could be the 'same' individual, it seems we would need to reject the idea that reconfiguring particles in specific patterns necessarily preserves personal identity. There are a number of possibilities here. One could simply accept that 'individual' identity can be manifest across a number of different physical instantiations. That is, although I perceive myself as one individual, it may



be that there are many versions of me doing identical things, thinking identical thoughts, essentially sharing one consciousness... The existence of other such instances of me might be conceptually troubling in a number of ways. But to suddenly find that such beings exist would not cause me to doubt my own existence or identity.

As long as these co-existing beings behave identically as well as being the product of the same physical configuration, the challenge is not insurmountable – I simply have to recalibrate my ideas about how many of me there can be sharing one consciousness. However, if we open up the possibility that these other versions of me could start behaving *differently* from each other it no longer seems plausible to say that there is one individual or one consciousness. But of course, at the moment where such different behaviour occurs, the physical configuration of these people ceases to be identical. From a physicalist perspective, we have to account for every aspect of my behaviour through reference to physical facts. Thus, the physicalist cannot account for divergence of thought, perception or action, on the part of these physically identical configurations. The moment that they diverge in so much as a thought, they are no longer physically the same.

Alternatively, one could simply argue that simultaneously existing configurations are not compatible with personal identity. That is, if we agree that a configuration at time T1 and at place P1 constitutes me, a second instance of that configuration at T1, but at place P2 would *not* constitute me, because their spatial location is necessarily different. And if we accept this, it seems a short step to assert that a configuration that is me at time T1 and place P1, would *not* be me at time T2 and place P1. In this way, temporal and geographical location become intrinsic parts of the physicalist account of personal identity. (Nevertheless, we are left with some problems of how to account for the fact that I can be me at different times and in different places in my current existence...)

However, these problems for physicalist accounts of personal identity need not destroy the prospect of immortality. Yes, it is hard to determine which, if any, of several identical configurations would be ‘me’. But provided that there is some continuity of consciousness that links one or all of these configurations, that is, she *perceives herself* as being a continuous individual, this should be sufficient, I suggest. And there is no reason to think that such continuity would be disrupted by the sudden coming-into-being of further selves. Just as we accept the idea that I am a continuously existing individual now, despite the problems in accounting for the constant flux of physical particles, occasional lapses of awareness, and the theoretical possibility that physically identical versions of me could exist.

## 7. Immortality or remortality?

Suppose that, as I claim, the reconfiguration of particles into ‘me’ does indeed take place. This would not be immortality if I were merely an inert piece of flesh. My argument only works if this reconfiguration is also alive. The fact – however unlikely – that my body could be reconstituted does not in any sense imply immortality any more than Lenin’s or Jeremy Bentham’s mummified bodies imply their immortality. No one would regard these preserved corpses as being immortal in any but the most whimsical of senses. Thus, it might seem that even if one accepted the argument I have given so far, it would not amount to immortality after all, just a rather depressing scenario of one’s inert body rematerializing every billion years or so.

However, this objection falls foul of our starting premise. That is, that we are entirely explicable/replicable through physical means. The idea that the lifeless body is all that could be produced by an infinite series of dice throws is not compatible with a physicalist account

of life. Unless we presuppose that there is a supernatural component to our lives (a soul, for example), we are compelled to accept that whatever it is that makes us alive is attributable to the physical arrangement of our components. I suggest here that, although there is much we do not currently know about exactly what mechanisms make a body ‘alive’ rather than dead or simply inanimate, if we are thinking about reconfiguring an *exact* physical copy of me as I am while now alive, the recurring version would also necessarily be alive. I might die instantaneously if the reconstitution did not happen to coincide with a habitable environment, which of course is yet another layer of (im)probability. But still, I would have been alive, however briefly. And over infinite spans of time, the shake of the dice that recreates me would almost inevitably coincide with favourable environmental circumstances that would enable this ‘me’ to survive.

However, there is another challenge associated with this question of how life and death can interact in the context of immortality. In my account of immortality there is no smooth, continuous progression of life. When I die, my existence comes to an end, until my next reassembly. Moreover, the spans of time between my existences may be inconceivably immense. I will spend vastly more time ‘dead’ than alive. My version of immortality is a sort of stuttering, hiccupping repetition. Is it convincing to call this immortality? Here, I have no strong views. It may be that we choose to focus on unbroken existence as a prerequisite for immortality. If so, the state of re-existence that I am arguing for, is something else. Re-mortality, perhaps, would be a better term for it. We are still mortal, but death does not necessarily spell the absolute end of our existence. Yet even if people ultimately reject my terminology, I think what I have demonstrated here meets enough of the conditions that Olson identifies as being central to immortality, to present a major difficulty for anyone who would argue that immortality is impossible without supernatural intervention.

## **8. Does current thinking in physics support the idea of infinite time?**

Olson’s contention is that one needs to posit a supernatural power in order to make any headway towards believing that immortality could be possible. Even then, he is sceptical that an omnipotent being could in fact confer immortality on his subjects. My claim is that, given infinite time, and a physicalist account of personal identity, immortality is (more or less) inexorable.

But do we really have infinite time? In the past, the answer was deemed to be yes. “We may affirm, with utmost confidence and positiveness, that both space and time are truly infinite” (Ames, 1911, p. 32). But modern physics doesn’t necessarily support the idea that time extends in a uniform way, providing a vast expanse through which atoms and molecules can play and reconfigure themselves. Indeed, as Carlo Rovelli puts it, “(p)utting a limit to infinity is a recurrent theme in modern physics” (Rovelli, 2018, p. 203-204). Not only this, but time itself is not what we tend to think. It is not a simple linear progression; in fact, the more one engages with the most complex elements of quantum physics, the less sense time, in our everyday conception of it, seems to make. For Rovelli, it is reasonable to assert that “At a fundamental level, there is no time” (Rovelli, 2018, p. 158). This does not look favourable for my account of immortality at all. My account is based on a version of physics that no longer holds sway, in which time and space move along predictable lines, whose relationships with each other are explicable and predictable. According to Rovelli, these accounts of space and time are mere fictions.

So what does this mean for my conjecture? It certainly makes it more conjectural and

less of a certainty. But I suggest that developments in quantum physics should not yet make us ditch the prospect of physicalist immortality. For a start, the *possibility* of physical reassembly remains real. Infinite stretches of time would make reassembly almost certain. But it remains eminently possible. And as time goes on, it becomes more likely. A further point is that while current thinking in physics seems to weigh against the idea of infinite time, things may change again in ways we do not yet suspect. Many contemporary physicists acknowledge that the degree of uncertainty involved in our knowledge of the world is immense. Rovelli himself says “am I sure about all this? I am not” (Rovelli, 2018, p. 228). Contemporary physics is our best guess at explaining the phenomena we see around us in ways that harmonise with other theories and beliefs. Therefore, it can and will change.

But even if we accept the idea that the kind of linear time and space that I have discussed are a convenient fiction, bearing little correspondence to the real state of the world, what follows from this? One might say that it is obvious – my account of immortality must be ditched. It rests on fictional ideas that bear no relationship with reality. However, I think this would be hasty. Our lives are largely based on useful fictions of whose absolute truth we cannot currently be certain. Time, according to the most recent thinking in physics, is not at all what we usually think it to be. Yet we continue to use it, to make predictions on the basis of it, and to incorporate it into our lives. Thus, my conjecture is indeed premised on an understanding of time and space that may well turn out to be false. But these understandings also underpin nearly all of what we think we ‘know’.

## 9. Conclusion

In this paper, I have tried to show that immortality resulting from reassembly of physical particles is entirely plausible, given infinite expanses of time. Contrary to the claims of ET Olson, we have no need whatsoever to posit a supernatural being in order to suppose that immortality is possible. My argument rests on a number of key assumptions and can be summarised as follows:

1. Given a physicalist account of personal identity
2. And infinite time
3. Any individual is almost certain to be ‘reassembled’
4. We do not require the intervention of any supernatural being for this to be the case
5. Such reassembly can plausibly be regarded as a form of immortality

Therefore, immortality is almost certain, without supernatural intervention

If point 2 above is false, then my conclusion does not follow, or is at least much weaker. But a crucial fact to note here is that this paper aims to disprove Olson’s claim that supernatural powers are required for immortality. Point 2 above is a question of physics rather than of theology. Therefore, it seems that the likelihood of immortality boils down not to appeals to the supernatural, nor to God, but to disputes about cosmology and physics.

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