

## **What Matters in Survival: The Fission Problem, Life Trajectories, and the Possibility of Virtual Immersion**

**Abstract:** This paper has two goals. The first is to motivate and illustrate the possibility that we can accept Parfitian arguments about the importance of personal identity, while rejecting fission as an instance of preserving what matters in survival. The second goal is to develop a particular externalist view of what matters in survival that can accommodate and explain this possibility. The motivation for this conception of what matters comes from considering certain cases of virtual immersion – the immersion of a psychological subject in a virtual world. Replacing the standard psychological continuity theory of what matters with the “life trajectory” theory, developed here, not only rules out fission cases as those in which we have what matters, but also explains different reactions we might have to different virtual immersion scenarios.

### **1. Introduction<sup>1</sup>**

The traditional puzzle of what makes a person one and the same over time has been superseded, in many circles, by the question of what matters in the survival of a person over time – those facts required to hold for a present person A to identify with a future person B in the same way they would have had they maintained their identity, and that allow that future person B to identify with that past person A in the same way they would have had they been that person in the past.<sup>2</sup> A present person A identifies with a future person B when person A takes their existence as explaining the existence of person B in the future. Similarly, a future person B identifies with a past person A when person B takes their

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<sup>1</sup> For the sake of neutrality, the singular pronoun ‘they’ and its variants will be used throughout.

<sup>2</sup> For arguments that there are both forward and backward looking requirements in order to have what matters in survival see Schetchman (2001). For other definitions of what matters, see Martin (1995), Parfit (1971, 1984), Perry (1976), and Unger (2003). It should be noted that Parfit is not consistent in his use of the term ‘survival’. Sometimes he uses ‘survival’ as a stand in expression for ‘persistence’ (1984), but at other times (1971), he drives a wedge between the two concepts. I will follow the more natural (1984) use in which ‘survival’ has the same meaning as ‘persistence’, and instead use Parfit’s term ‘what matters in survival’ to indicate the concept that maintains what matters, but fails to maintain identity.

existence as explained by the existence of A in the past.

This shift in focus from identity to what matters in survival is largely the result of two developments in the discourse on the nature of personal identity: first, the early discovery, and wide acceptance, of the idea that psychological continuity is the main factor that allows for such identification, going back to at least Locke (1694); and second, the later recognition that the presence of psychological continuity is not sufficient to maintain a person's identity over time. That psychological continuity does not track identity is explained by two facts: it is duplicable, and it comes in degrees. This second development, however, did not come into play until the 1970's, popularized by Parfit's work (1971, 1984, 1995, 1999, 2012).

By far, the most controversial reason for thinking that psychological continuity cannot guarantee identity is that psychological continuity is duplicable. This argument rests on considering fission cases – in which a single person undergoes some process whose end result is the creation of two distinct persons, each of them psychologically continuous with the original, and with one another, but clearly cannot be identical to each other.<sup>3</sup> Some psychological continuity theorists embraced this apparent consequence. Lewis (1983), for instance, agreed that we have what matters in fission cases, as do some others (Moyer, 2008; Ehring, 1995).<sup>4</sup> However, there are many contemporary theorists, both identity and non-identity theorists alike, who still find it counterintuitive. Sosa (1990), for instance, so finds it, as does Unger (1997), and many others, including Korsgaard (1989), Whiting (2002), Rovane (1998), and at least for cases of symmetrical fission – cases in which both fission products are equally independent autonomous agents simultaneously – so too does

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<sup>3</sup> The fission case was originally introduced by Wiggins, and subsequently discussed in his (1980).

<sup>4</sup> Because I am not here adjudicating between identity theorists and Parfitians I will not be explicating the specifics of Lewis's account of identity over time.

Martin (1998). Call anyone sympathetic to psychological continuity theory, to its consequence that identity is not what matters, but who also believe that one-to-one correspondence over time is required to have it a “Parfitian singularist.” Because this theorist accepts that identity is not what matters, but that duplicating psychologies also cannot preserve what matters, their only recourse is to explore whether something might be missing from psychological continuity theory that could allow for a distinction between duplication cases and ordinary singular cases.

In the search for a Parfitian singularist solution to the fission problem, I will explore a thought experiment designed to reveal what is missing in standard psychological continuity theory, and which is also suggestive of an account of what does matter. These cases are what I call cases of “virtual immersion.” While virtual immersion cases can take many forms, the one with which I will first be concerned involves a psychological subject being immersed in an entirely illusory environment. Our reactions to virtual immersion cases such these reveal that being connected to, and being able to participate in, the external environment is important for survival. I subsequently suggest an explanation for this: to have what matters in survival, a subject must be able continue to live their lives as they were formed in their external environments. That is, what I will be calling a subject’s “life trajectory” must continue for that subject to have what matters. I will explain the life trajectory theory, and I will argue this view is superior to standard psychological continuity theory, because it is consistent with Parfitian singularism, and because it can explain our reactions to certain cases of virtual immersion much better than a standard psychological continuity theory can.

The paper is organized as follows: in the following section, the motivations for Parfitian singularism – for accepting that identity does not matter in survival, but that one-to-

to-one correspondence between psychologically connected subjects – is explored. In Section 3, I show what is wrong with standard psychological continuity theory, and I offer and develop a theory that avoids the problems with that view – the life trajectory theory. In Section 4, this theory is applied to fission and virtual immersion scenarios. Finally, I consider three separate objections in Section 5.

## **2. Parfitian Singularism: Motivation**

Parfitian singularism consists of two separate commitments elucidated just above. I will now explain the motivations for both commitments of the Parfitian singularist.

### **2.1 Why Identity Does Not Matter in Survival**

There are at least two primary arguments from Parfit for why identity does not matter in survival. The first, the argument from fission, the singularist must reject for the sake of consistency.<sup>5</sup> The second, which the singularist can accept, concerns the fact that psychological connectedness – what must hold between adjacent subjects for them to count as psychologically continuous over time – is a matter of degree.

Parfit (1999) offers the argument from fission by showing that what matters to us, intuitively, is psychological continuity. To do so, he asks us to consider the following hypothetical scenario: Suppose that, in order to survive, you require an operation, which involves splitting your brain in two, disposing of the unhealthy hemisphere, and then transplanting the other healthy hemisphere into a body qualitatively indistinguishable from your own. Assume that a single hemisphere can support the whole of your previous psychology, so that there will be no disruption in psychological continuity between yourself

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<sup>5</sup> The first argument is presented as depending only upon the thought experiment that establishes that what we care about is psychological continuity. A complete reconstruction of the argument (Parfit, 1999) depends upon additional reductionist premises that are inessential for the points being made here.

as you existed prior to this operation, and the being that exists afterwards. Many of us would agree that this procedure maintains what matters to us in survival.

A second thought experiment is required to establish the conclusion that identity is not what matters. You are asked now to imagine that you undergo a procedure just like the previous operation, with the exception that this time both hemispheres of your brain are now transplanted into separate bodies, each one qualitatively indistinguishable from your own. This thought experiment shows that psychological continuity, as Parfit conceives of it, can be maintained twice over, thereby establishing that psychological continuity alone cannot preserve identity (1984: 261-265).<sup>6</sup>

Of course, if Parfitian singularism's two commitments are to be coherent, there must be another reason for thinking that identity is not what matters.<sup>7</sup> And there is.<sup>8</sup>

This next reason is straightforward. For Parfit, what constitutes continuity over time has to do with the connections of similarity between adjacent mental states, and this can be a matter of degree. Therefore, for a psychological continuity theorist, if there is a high enough degree of similarity between a later and early subject's adjacent mental states, then that later subject has what matters in the survival of the earlier subject – is psychologically continuous over time with the earlier subject.<sup>9</sup> However, identity is not a matter of degree;

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<sup>6</sup> Williams (1976), preceding Parfit, also made this point in what he described as the “reduplication argument.”

<sup>7</sup> The treatment of Parfit's argument is brief. For more discussion of the details of Parfit's arguments, along with issues about interpretation, see Johansson (2010).

<sup>8</sup> Note that there are arguments that identity is in fact maintained in fission, the most famous of which is due to Lewis. However, my goal is to address Parfit's challenge by accepting his assumptions, and then showing that the fission argument fails nonetheless.

<sup>9</sup> See Schetchman (2001) for more detailed discussion.

objects are either absolutely identical or not, adjacent or otherwise.<sup>10</sup> Therefore, if what matters is psychological continuity, and connectedness is a matter of degree, then what matters in survival cannot be identity.<sup>11</sup> This argument the singularist can freely accept, of course, and provides them with a reason for accepting a non-identity theory of survival.<sup>12</sup>

## 2.2 Singularism

While the second argument that identity cannot be what matters makes room for singularism, what would motivate someone to be a singularist if identity is not what matters? To answer this question, I will rely on a distinction that Belzer (2005) develops between what he calls the “unity reaction” and the “identity reaction.” The unity reaction says that the preservation of your identity over time is a matter of remaining a unified, or a singular subject over time.<sup>13</sup> However, this says nothing about whether that unified object over time is strictly speaking identical to you. The idea is that, because the identity relation is itself one-to-one over time, our conceptual apparatus of identification also requires one-to-one relations over time. Putting this in terms of psychological continuity theory, only a being that has a unified consciousness or psychology over time is a candidate for having what matters

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<sup>10</sup> In fact, Williams (1970) argues that this is a reason for rejecting psychological continuity theory as a theory of personal identity.

<sup>11</sup> There is a question here of whether it is appropriate to talk as if having what matters is an all or nothing matter. Whether it is will depend upon whether the relations, once they reach a certain threshold, entail that what matters is maintained. I have no particular commitments either way. Even my own claim that external relations matter, should it be expressed in completely explicit terms, would require explaining which relations are more important than others, and how, and how many are required, and so on. Being this explicit is beyond the scope of this paper however. The reader should note, however, that I will speak as if having what matters is all or nothing simply for sake of simplicity in expression. For more discussion of the issue of having what matters in survival being a matter of degree, see Lewis (1983).

<sup>12</sup> Another potential reason is skepticism about the very notion of the identity of an individual person over time.

<sup>13</sup> See also Perry (1972) for discussion of this distinction.

in the survival of any other at any given time. It is the unity reaction, rather than the identity reaction, then, that justifies our intuition that one-to-one correspondence over time matters in survival, thereby giving us reason to be singularists independent of any commitment to an identity theory of what matters in survival.

### **3. The Life Trajectory Theory**

Having offered some motivation for Parfitian singularism, we will now consider a virtual immersion scenario, which casts doubt on the idea that psychological continuity theory provides the correct account of what matters in survival.<sup>14</sup> I will then suggest and develop a hypothesis about what does matter in survival based on the results of considering this scenario.

#### **3.1 Virtual Immersion**

Before considering this thought experiment, I want to first make the claim that, in wanting to survive, it is not simply survival simpliciter we desire, we also desire to survive as a specific kind of thing: a person. After all, we could survive as a human organism in a persistent vegetative state, and we would count as the same human organism, but nothing that mattered to us would remain. For this reason, in addition to knowing what standard psychological continuity theory says about diachronic identity, we also need to know what it says about the nature of being a person.

Concerning identity over time, the standard form of psychological continuity theory, succinctly characterized by Lewis (1983), consists simply of a commitment to similarity

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<sup>14</sup> Others also reject psychological continuity theory. See Olson (1997) and Williams (1970) and (1976) for arguments against it in favor bodily and biological continuity views. Each point out several problems with the psychological criterion of identity. However, as noted earlier, assessing non-psychological accounts of what matters in survival is beyond our scope here.

between a subject's adjacent mental states, together with causal or counterfactual dependency of a subject's current mental states on their previous mental states over time.<sup>15</sup>

Regarding persons as kinds, the natural correlative commitment is this: necessarily persons are a certain kind of psychological entity.<sup>16</sup> This is reasonable. For example, we don't consider non-psychological beings, such as rocks, as even potential candidates for personhood.<sup>17</sup>

Having made it clear that maintaining personhood is also important in what matters in survival, I will now turn to the thought experiment involving virtual immersion, which I will claim threatens our personhood, and therefore threatens what matters in survival. I will also argue, however, that the experiment does not threaten the commitments of the psychological continuity theorist to the nature of personhood.

The thought experiment, therefore, presents a counterexample to the standard psychological continuity theory. It is based on Nozick's (1998) discussion of what he calls an "experience machine" – a machine into which a person can enter that will then provide that person with a never-ending supply of those experiences they find desirable. In this

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<sup>15</sup> See Shoemaker (1970) who points out problems with the causal-connectedness requirement. For problems with the similarity requirement, see MacIntosh (1993).

<sup>16</sup> This does not entail that any given being that is a person is necessarily psychological, however. See Rudder Baker (1999) for a thorough exploration of the nature of this assumption.

<sup>17</sup> When speaking of a person as not persisting over time, but rather at a time, we need a criterion for individuating one person from another – for what makes a person a singular person separate from others – which naturally speaks to our concept of what it is to be a person altogether. One idea is that a person is the subject of psychological states or experiences that have a deep unity not shared between separate persons.<sup>17</sup> Some, however, such as Hume (2000), Parfit (1984), Strawson (1997), and Unger (1990), have pointed out that psychological experience alone is insufficient to sustain any kind of a unity of consciousness. Kant (1999), in fact, found this issue so pressing that he gave it its own moniker "The Unity of Apperception." Even the neuro-scientific literature has coined an expression for it: The Binding Problem.



experiment, choosing to be virtually immersed, to enter the machine, involves choosing to identify oneself with a being in a situation similar to that of being brain in a vat, in which the corresponding subject's experiences do not accurately represent the external world, but instead, are entirely illusory.

Notice that, in entering the experience machine, a being within it would maintain their status as a person according to psychological continuity theory. Despite the fact that I offered only an explicit statement of a necessary condition for personhood on this view, I claim that we can, nevertheless, reasonably infer that the subject in the experience machine would meet this view's sufficient condition(s) for being a person as well. And the reason is that the subject in the experience machine is perfectly psychologically continuous with subject prior to entering the machine, which we can safely assume did count as a person. It would be unclear, then, why a being in the experience machine would lose their personhood according to a psychological continuity theorist, since they meet the necessary conditions for personhood, and since there is nothing missing with respect to the prior subject as compared to the experience machine subject regarding their psychological properties. In other words, it seems reasonable to suppose that the subject in the machine would meet the sufficient conditions for being a person, according to the standard psychological continuity theory, insofar as the prior subject did.

However, despite the fact that, according to psychological continuity theory, nothing is missing for having what matters in the experience machine, many of us, I believe, would recoil in horror at the decision to enter the machine, viewing the persistence of the thing in the machine as a mere simulacrum of what the person entering it once was, and so viewing the entrance into the machine as threatening what matters to us in our concern for

our own survival. The reason for these doubts, in this case, is not that a psychological subject would cease to be, but rather that entering the experience machine threatens the subject's personhood altogether, something already mentioned as key for having what matters in survival.

There may be some doubt, however, about whether the experience machine threatens our personhood. But insofar as there is even a doubt about whether a being in the experience machine is still a full-blown person, the experience machine is an example that the psychological continuity theorist must address. And, as a matter of fact, our practices with respect to persons reflect these doubts. Consider our ambivalence about how to treat those seriously delusional as a result of some kind of mental illness or deterioration. A situation not unlike what is about to befall our experience machine victim who will lose their ability to track reality.<sup>18</sup>

I have made a case for the claim that choosing to be in the experience machine threatens a subject's personhood, since the subject in question is inhibited from interacting with their actual environment, in the same way as a brain in vat would be, and this threatens what matters in their survival.<sup>19</sup> This puts a constraint on theories of what matter in survival – the subject in question must be connected to their external environment in an appropriate way.

The question now is: what hypothesis concerning what matters in survival could

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<sup>18</sup> In contrast, Wilson (2005), in arguing against an agency-based criterion of personhood, claims that while a mentally deranged person's agency may be diminished, we should not conclude that therefore their personhood is also so diminished.

<sup>19</sup> Parfit (2012: 17) endorses the idea that psychological subjects persisting as brains in vats would, in fact, preserve what matters, but the scenario he considers is one in which that brain in a vat maintains relations to the external environment, and still tracks those facts that a brain in a vat is capable of tracking.

capture what is missing in the experience machine case? One hypothesis is as follows: the reason the experience machine threatens what matters is because it prevents subjects from the continued living of their lives – an aspect of a person’s ordinary existence. Living a life creates what I call a “life trajectory,” which is the continuous path of a subject of experience through an external context. These paths are created and maintained by a subject’s interacting with, and of necessity, accurately representing their environments. Living a life, then, or having a life trajectory, creates and maintains the external relations that hold of a subject, what I claim is part of what matters in survival. The life trajectory theory thus incorporates the idea that persons are fundamentally tied to existing within an external environment, a fact that, as we saw, can be illustrated by completely removing them from such contexts.<sup>20</sup>

### **3.2 Life Trajectories as What Matter in Survival**

Having introduced the notion of a life trajectory theory, I will now develop the view in more detail. What exactly is it to continue a subject’s life trajectory? The answer I offer is that a subject living a life has various interactive relations to their environment, which in turn, confers upon them certain extrinsic properties. For example, if a subject is related to a book by owning it, then that entails that that subject has the property of owning a book. It seems like a natural suggestion, then, to make it the case that a subject’s potential successor must continue at least some of these extrinsic properties. To make the exact nature of this theory clear, three things need to be explained: (1) the nature of these extrinsic properties that a subject living a life has; (2) which of these extrinsic properties matter in survival; and (3)

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<sup>20</sup> This idea is put forward in McDowell (1997) although for different reasons and to support a different hypothesis than my own.

what continuity is with respect to extrinsic properties on a Parfitian non-identity theory of what matters in survival. The first two questions are answered rather simply, the third question, however, is rather complex.

### **3.2.1 The Nature of Extrinsic Properties**

To begin with the first question: A person's life involves facts about a psychological subject's relations to an external context over time. The set that will be important in an account of what matters will include only those properties that individuate particular life trajectories. For example, my life is the life of a psychological subject who is her father's second-born child, a fact that individuates the beginning of my life trajectory as well as continuing to individuate it since I continue to have that extrinsic property over time. My life is also the life of a person that includes a multitude of biographical facts, some current, others historical. For instance, my birth occurred in a certain spatial temporal location, and I am the sometimes-reluctant owner of three Catahoula canines. I am also the sole author of this paper. All of these facts individuate my life trajectory. Of course, similar facts individuate every other person's life trajectory.

Furthermore, not only do certain extrinsic properties individuate life trajectories, they also come in different flavors: temporary, long-standing, and permanent. Examples of these kinds of extrinsic properties, respectively, include: the properties of my now drinking a cup of coffee, and of wearing a pair of jeans; my properties of owning three dogs, and of living in Upstate New York; and lastly, my properties of being my father's second-born child, and of being the author of this paper.

I will elaborate on the concept of permanent extrinsic properties, since they may not be grasped as intuitively as the others. A permanent extrinsic property is one that originates

in virtue of a subject's relations to their external context, but they do not essentially depend upon the continuous holding of those originating relations. Examples of these properties include the properties of being my father's second-born child, and of being the author of this paper. Because having such properties do not depend upon the continuous holding of the originating external relations, these properties are held permanently. For example, I am still my father's second-born child long after he has died, and I continue to be the author of this paper even if it, and all of its instantiations, are destroyed.<sup>21</sup>

### **3.2.2 The Extrinsic Properties That Matter in Survival**

To address the second question concerning which, if any, of a subject's extrinsic properties must be maintained in order for that subject's life trajectory to continue, it must be the permanent extrinsic properties. It cannot be the temporary extrinsic properties, since these are properties that come and go, that begin to hold and cease to hold of a subject, all the time, without threatening that subject's survival. Neither can it be the more long-standing ones, since these too come and go without threatening the survival of the subject that has them. The only properties that hold throughout the life of a subject are the permanent properties.<sup>22</sup> It must therefore be the continuity of these properties that must figure in an account of what matters in survival. After all, they are lost only upon the cessation of a

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<sup>21</sup> But how then does the experience machine threaten these kinds of properties, if we have them even if the relata no longer exists? The answer is because merely having extrinsic properties is not enough. There is a certain epistemic uptake required for interacting with one's environment in order to continue living one's life. So even if strictly speaking the subject in the experience machine still has certain extrinsic properties, they are not expressing having them in the context of living a life, and this is a requirement on having what matters.

<sup>22</sup> Perry (1976) also raises the issue of whether having certain properties – for him, those that relate a subject to their past – are special in an account of personal identity, since no one but the subject could have them. Ultimately, however, Perry thinks that this is a consideration in favor of an identity theory of persons, unlike the current hypothesis under consideration.

subject. One motivation for thinking that such properties do matter in survival is because, at least in part, the fact that subjects have these permanent properties that allows them to have a sense of continuity over time, a connection to their past and a shape to their future.

### **3.2.3**

I now turn to our third question. Having identified the set of properties that must be maintained by a later subject to preserve what matters in the survival of a current subject, the question now is: how could a later subject possibly maintain these properties without also thereby being identical to the earlier subject?

This worry has its roots in a problem raised by Butler (1736) to Locke's (1694) early psychological continuity theory of personal identity – the idea that a later subject is identical to an earlier subject just in case the later subject remembers having had the earlier subject's experiences. According to Butler, the only way we can know if a later subject remembers being an earlier subject is if we know already that that later subject having the memory is identical to the subject of the event being remembered. This is because categorizing a mental state as a memory seems to require that the mental state that the subject is having, the so-called memory, must accurately represent the past of that subject. This is what it is to have a memory. For example, if you have a memory of having gone to Niagara Falls, then that memory encodes the fact that it was you, the person remembering, who experienced going to Niagara Falls – that the subject of the memory is identical to the subject who had that experience. As a theory of personal identity, then, the memory theory is uninformative.

The same worry arises for the idea that a later subject must maintain the permanent extrinsic properties of an earlier subject. Like the memory theory, the life trajectory theory,

can also be argued to presuppose identity. If a later subject has the permanent extrinsic properties of an earlier subject, this could only be because that later subject is to be identical to that previous subject. To illustrate, suppose you possess the property of being the author of a certain paper. According to the life trajectory theory, a property like that must be continued by any candidate continuer of an earlier subject. On the face of it, however, the person who could continue that property is the person who actually wrote the paper. It would seem, therefore, that any later subject who legitimately continues your life trajectory, which includes the property of having written that paper, must be identical to you.

In response to Butler's original objection to the memory criterion, several writers – most notably Shoemaker (1970) – have introduced a different notion of memory, one that does not define memories as having to be accurate in the previous way to count as memories, and therefore this notion is not subject to Butler's worry. On Shoemaker's account, which Parfit draws on, these types of memories are described as "quasi-memories," or as "q-memories." The idea is that a later subject's q-memories are indistinguishable from its predecessor's real memories, they are just not based on facts actually experienced by a later subject strictly identical to the earlier subject.<sup>23</sup> They are merely qualitatively indistinguishable.

I claim that the life trajectory theory, just like the memory theory, can likewise be

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<sup>23</sup> Note that quasi-memories as described here must come from a person's psychological predecessor and not just from anywhere. See Sidelle (2011) for an argument that the causal requirement on the preservation of personal identity entails this. For Sidelle, the memory must be caused (not in necessarily in the normal way), in some appropriate way, by the current psychological subject's predecessor. To not require this, is to jettison the causal requirement altogether, and to allow for random doppelgangers to be psychologically continuous with a later subject. Memory-like experiences can be induced in any number of ways, of course, but these would not be memories at all, if not caused in the normal way, and would not even be quasi-memories, if not caused in the appropriate way. Rather, they would be fake or so-called memories.

refined to escape circularity, by appeal to "quasi-properties," or "q-properties," rather than ordinary properties. Given this refinement, the extrinsic property requirement on the continuation of a life trajectory theory now takes this form: if a future subject is to have what matters in the survival of an earlier subject – the continuation of that earlier subject's life trajectory – then that future subject must possess the q-properties corresponding to the permanent extrinsic properties of that earlier subject.

But what are these q-properties, and under what circumstances does a future subject possess the q-properties corresponding to an earlier subject's permanent extrinsic properties? The intuition is simple, just as it is for the memory theory, and it involves two conditions:

- (1) A future subject has the q-properties corresponding to an earlier subject's permanent extrinsic properties just in case that future subject can relate to their external context in a way qualitatively indistinguishable from the way in which that earlier subject did and does relate.
- (2) A future subject must also be qualitatively indistinguishable from an earlier subject in the sense that that later subject must continue to have the very same q-properties corresponding to the permanent extrinsic properties an earlier subject's would have had.<sup>24</sup>

Notice that condition (1) is a backwards looking condition. In order for the count as A's successor, B must be able to take ownership of A's past and present. Relatedly, condition (2) is forwards looking. In order for B to count as A's successor, A must be able to see B as

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<sup>24</sup> These two conditions – the first one is concerned with continuity in a previous subject's past and current extrinsic properties, while the second condition is concerned with continuity with respect to an earlier subject's future extrinsic properties. This incorporates both backward and forward-looking requirements for having what matters in survival.



their means to having a future.<sup>25</sup> Now that I have stated the simple intuition, the next step is to give a precise definition or explanation of the nature of these q-properties. Doing so will require some discussion of the modal properties of the future subject – the candidate continuer for the earlier subject – and of the earlier subject.

Suppose that, in the actual world *i*, a subject A ceases to exist at moment *t*, and another subject B, psychologically continuous with A, comes into existence. As stated, B can have the q-properties corresponding to A's permanent extrinsic properties in *i*, just in case B meets conditions (1) and (2).<sup>26</sup>

To illustrate how conditions (1) and (2) apply to a specific permanent extrinsic property, suppose that in the actual world *i* and at moment *t*, upon A's cessation they have the property of being the author of a certain paper. In order for now existent B to be A's continuer on the first condition, B must be indistinguishable from A with respect to having the property in question. So, for instance, B must be recognized as the author of the paper, must remember having authored it to the extent that A did, identifies with that paper as their own, and so on. On the second condition, if B is A's successor with respect to our sample property, if A would have been an author after moment *t*, so too would B have to be indistinguishable from A in that respect as well.<sup>27</sup> I'll now give account of the truth conditions on having a q-property for both conditions (1) and (2).

To satisfy condition (1) there must be an alternative possible world *j*, just like the

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<sup>25</sup> See Schetchman for a discussion of this need in her 2001(b).

<sup>26</sup> We ignore the vacuous case of a counterfactual's satisfaction in virtue of the non-existence of A in various possible scenarios.

<sup>27</sup> Note that this condition does not require B to relate to that property after moment *t* in same way as A, all that is required to be qualitatively indistinguishable from A is that B has the q-property of being the author of a certain paper. The requirement for satisfying the second condition then are somewhat weaker than the requirements for satisfying the first condition.

actual world except that, in that world, A never existed at all, but that instead, subject B exists and is an exact psychological duplicate of A in the actual world *i*, as well as having all of the permanent extrinsic properties that A had acquired in *i* before and including up to moment *t*. That is, it must be possible for B to actually have the very same extrinsic properties that A did and does, say for instance, with respect to A's being the author of a certain paper. For B to satisfy condition (1), they must actually be the author of a certain paper in possible world *j*. If B satisfies condition (1), then we say that B has the q-properties corresponding to those permanent extrinsic properties that A did have and does have at moment *t*.

Now consider condition (2). What would make B qualitatively indistinguishable from A with respect to the permanent extrinsic properties A would have had after moment *t*? Presumably, there are a number of different courses A's life could have taken after moment *t*, each of them conferring upon A a different set of permanent extrinsic properties in different scenarios. For example, A could have decided to become a parent, or to write a book. Or, A could have been born in a different location, or had different parents, and so on. This is all true. However, condition (2) does not state that B must have the permanent extrinsic q-properties corresponding to those that A could have had after moment *t*. The condition states that B must be indistinguishable from A with respect to the permanent extrinsic properties A would have had after moment *t*.

Condition (2), then, involves a counterfactual, and therefore truth condition for satisfying condition (2) involves appealing to the conditions under which a counterfactual is true, which I will now explain.

At least one way of evaluating counterfactuals for truth is to see if in all those worlds

most similar to our own, in which the antecedent holds of the counterfactual holds, the consequent also holds. The antecedent in this case is that A exists, the consequent is that A has property P after moment t. In other words, if in all of those worlds most similar to ours in which A exists, A has a certain permanent extrinsic property after moment t, then that is a property A would have had after moment t. Now which properties, after moment t, can we know will hold of A in all of the worlds most similar to our own? Well first consider which worlds are most similar to our own. All of those worlds at which moment t is as it was, except that A never ceased to exist.

Now consider one of those worlds at moment t, in which A is exactly the same at moment t, except that they survive, and consider the fact that in that world at that moment, A is the author of a certain paper. Would this be a world in which A continues to be the author of a certain paper? The natural answer seems to be yes. If A had that property at moment t and if each moment t in each world similar to ours is held fixed, then whatever properties A had at moment t in this world, A will continue to have in all of those worlds similar to ours.

Of course, after moment t some of A's permanent extrinsic properties will vary across worlds, because they were not determined at moment t. But then these are not properties that A would have had after moment t, these are only properties A could have had after moment t. Therefore, we now know that the only properties that will certainly hold in all of those worlds closest to our own are those that A already had at moment t.

Having determined, finally, which properties A would have had after moment t, we'll now return to subject B. How can B satisfy condition (2)? My response is that in order for B to satisfy the second requirement, B must have a future in which B does not lack any of the

permanent extrinsic q-properties that correspond to those permanent extrinsic properties that A would have had after moment t, and nor does B have any possible future in which becomes true that B only once had that q-property, except in the case of B's death.

Now, in terms of possible worlds, what must hold in order for B to be conferred these future-oriented q-properties – to continue to be A's successor in the future? The answer is that B satisfies condition (2) insofar as there is no possible world after moment t in which B fails to have all of the very same extrinsic properties as A does in all of those worlds most similar to ours in which A exists. Neither can it be the case that B ever loses any of those permanent extrinsic properties, save for their death. For instance, again, assuming A wrote a certain paper, B is only A's successor just in case B there is no possibility that B lacks that property nor ever loses the property of being an author.<sup>28</sup> If B satisfies condition (2), then B can be said to have the future-oriented q-properties corresponding to the permanent extrinsic properties A would have had after moment t.

#### **4. Applications: Fission and Virtual Immersion**

Having developed the life trajectory theory, I will now return to the central concern, showing how this hypothesis is consistent with Parfitian singularism, in that it rules out fission scenarios as those that preserve what matters in survival. In addition, we will explore how this theory provides further insight into the experience machine and the possibility of virtual immersion, thereby providing further support for the theory.

##### **4.1 Fission Scenarios**

To see why the life trajectory theory rules out fission scenarios, I will consider a scenario in

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<sup>28</sup> Not that this does not entail that B cannot change the way they relate to those extrinsic properties over time from the way A would have done, only that B cannot ever lose that property.

which, once again, a psychological subject A has authored a certain paper. Now consider A at a particular moment  $t$ , after having done so, and suppose that at  $t$ , A undergoes a Parfitian procedure that ends with the creation of two subjects B1 and B2, both psychologically continuous with, and yet distinct, from A. That is, suppose that A fissions. Now, according to the life trajectory theory, can B1 and B2 both have what matters in fission scenarios? Well, they can only if, in addition to maintaining psychological continuity, both B1 and B2 can continue A's life trajectory. And what this means, on this theory, is that both B1 and B2 must possess the  $q$ -properties corresponding to the permanent extrinsic properties of the subject A. Now, since, by assumption, A wrote the paper in question at some point prior to  $t$ , it follows that, at  $t$ , the subject A has the property of being the author of that paper. And from this, it follows that, if both B1 and B2 are to continue the life trajectory of A, both must have the  $q$ -property corresponding to the property of being the author of a certain paper.<sup>29</sup>

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<sup>29</sup> Parfit argued that non-branching psychological continuity, which in his earlier work served as his definition of identity, cannot be what matters in survival, because what matters in survival is a matter of the intrinsic relations holding between earlier and later subjects, in Parfit's case the intrinsic relations of psychological connectedness between earlier and later subjects. However, in fission scenarios, each fission product can claim to be intrinsically psychologically related to their predecessor. Whether there are two or not is an irrelevant extrinsic factor. Therefore, one-to-one correspondence between earlier and later subjects is inessential for what matters in survival. There is a worry that this argument might also apply to the life trajectory theory. According to the life trajectory theory, if there is only one later subject that meets the requirements for continuing an earlier subject's life trajectory, this must depend upon the intrinsic relations between that earlier and later subject. But now suppose that we have two subjects, each of whom separately can satisfy the requirements for having what matter in survival. Now since each fission product can have what matters, in terms of their intrinsic relations to their predecessor, it should not matter whether there are one or two of them. This means that one-to-one correspondence over time is inessential for what matters. The life trajectory therefore fails as a singularist theory of what matters. However, the idea that having what matters can depend only upon the holding of intrinsic relations is an assumption that I claim derives its plausibility from the fact that the holding of identity relations must depend only upon the holding of intrinsic

But can fission products have the q-property of having authored the paper? Relying on condition (1), the answer must be no. Condition (1) would require that if B1 and B2 have the q-properties corresponding to A's extrinsic properties, there must be a world *j* at moment *t* in which A does not exist and in which both B1 and B2 have the very same extrinsic properties at *t* that A had and did have in the actual world *i*. Turning to condition (2), it must also be true that there are no possible worlds in which B1 and B2 lack, or lose, the permanent extrinsic properties that A would have had after moment *t*.

Regarding the condition (1), I argue that B1 and B2 cannot satisfy it. If they could, then, there must be a possible world *j* in which both B1 and B2 at moment *t*, each psychological duplicates of A, could both be the author of a certain paper. However, this is not possible given that only one person at a time can be the author of a certain paper. What could be true in *j* is that B1 and B2 have some kind of authorial status, perhaps for instance, having co-authored a certain paper. But having the property of being a co-author would not make B1 and B2 able to continue A's permanent extrinsic property of being an author in a way qualitatively indistinguishable from the way A had that property at moment *t*. And, the reason is fairly clear: being the author of a certain paper is a property that has a very different qualitative character from, say, the property of being the co-author of a paper.

For instance, at moment *t*, A was recognized as the author of the paper, remembered having authored it, identified with that paper as their own, and so on. In contrast, being a co-author of a paper entails very different ways of being able to relate to the external context. If you are a co-author of a paper, for example, you are not recognized

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relations. But theories of what matters in survival are not identity theories, and therefore they can appeal to non-intrinsic factors as part of what matters, such as the existence or non-existence of another potential continuer of a life trajectory.

as the author to the paper, you recall having authored only parts of it, and you do not identify with that paper as only your own. Fission products, therefore, cannot satisfy condition (1) on having the q-counterparts of A's extrinsic permanent properties.

Now what about condition (2)? The second condition demands that both B1 and B2 cannot lack, or lose, those properties that A would have had after moment  $t$ .<sup>30</sup> As we saw, one of the properties that A would have had after moment  $t$  is being the author of a certain paper. In order for B1 and B2 to have this property, then there can be no possible worlds in which B1 and B2 exist, and lack the property of being the author of a certain paper after moment  $t$ . As before, however, by definition, the quality of having the property of being an author is something that two successors cannot both have. While it is true, that both B1 and B2 can claim to be psychologically continuous with something that once was the author of a certain paper – and this is not something that just anyone can claim. Still, having once been the author of a certain paper no more counts as having that property than would merely having once had all of my memories count as continuing my psychology. In this particular case, neither fission product has what is required for what matters in survival. The best they can do is sustain the past tense version of this property, and this violates condition (2) – that there is no possible world in which the successor of A can lack the

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<sup>30</sup> One potential objection to this criterion is that it begs the question, for suppose that at moment  $t$  in the actual world, A fissions. What permanent extrinsic properties would A have after moment  $t$  then? Well, it would seem that because there are two people, instead of one, there are no permanent extrinsic properties that A would have after moment  $t$ , since A has ceased to persist, or no longer survives in a way that makes having permanent extrinsic properties possible. The issue can also be put this way: in assuming that there are permanent extrinsic properties haven't I guaranteed that fission cannot preserve what matters in survival? My answer to this question is "yes." All of this I will admit to. What I will say though is that the idea that we have permanent extrinsic properties is far more basic than the idea that we can survive fission, so if anyone is begging the question, it is the fission sympathizer, not myself.

permanent extrinsic properties that A would have had after moment t.<sup>31</sup>

In sum, for permanent extrinsic properties, for example, the property of being the author of a certain paper, it is possible for fission products to have only the past tense or shared counterparts of these properties, neither of which qualifies as having the corresponding q-property. Fissioning, then, violates the two requirements for the continuation of a life trajectory, and therefore fails to maintain what matters in the survival of persons over time.

## 4.2 Virtual Immersion Scenarios

Now that it has been shown that fission cannot preserve what matters in survival, I will turn to some intuitions about virtual immersion. As it turns out, the life trajectory theory can explain and predict a range of intuitions about these cases.

In the experience machine case, we imagined the horror and anxiety we would feel about the possibility of identifying with a being immersed in a world in which their experiences were entirely de-correlated with facts about an external context. The

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<sup>31</sup> Note also this consequence of the second condition: on my view, sustaining life trajectories does not constitute sustaining identity. So suppose A does not fission, but is merely “replaced” by a continuer B who preserves what matters in A’s survival. Now, of course, it is always possible that B could fission in the future. Is it possible for B to continue to survive given that B only ever had the q-properties corresponding to A’s permanent extrinsic properties? The answer is no. Because condition 2 requires that in order for B to remain maintain A’s continuer, there are no possible worlds in which B lacks the permanent extrinsic properties that A would have had after moment t. This also means that, in order for B to be the successor of A, there are no possible worlds in which B loses any of those properties in the future either. Now B satisfies those conditions, and therefore, given the fact that B is A’s continuer, and therefore it is true that there are no possible worlds in B lacks A’s inherited properties, there are also no circumstances under which B survives, even if it is the case that B’s fission products C1 and C2 can claim to have once had certain q-properties, since the conferring, and maintaining of, those q-properties depends upon certain impossibilities holding in the first place. So if B continues A, whose survival depends upon not fissioning, so too does B’s survival so depend, despite the lack of identity relations holding between A and B.



explanation for this horror was that, in such a scenario, we lose what matters for our survival due to our lack of being appropriately connected to an external environment, and therefore suffered the loss of our personhood.

But now, instead, consider the anticipation we might feel if all psychological subjects could rid themselves together, en masse and interactively, of the shackles of bodily decay by immersing their psychologies within a shared virtual world in which they are maintained independently of their bodies. Suppose that, somehow, our aging, dying biological bodies become obsolete. Surely, at least some of us would not view these scenarios as constituting a threat to what matters in our survival. Indeed, we might, and probably would, look forward to a scenario like this as a way of achieving immortality.<sup>32</sup>

I'll now compare the two cases with respect to the apparent predictions of our reactions to both cases, according to standard psychological continuity theory and the life trajectory theory. As we saw already, standard psychological continuity theory predicts that we do have what matters in cases of virtual immersion, and therefore can predict our reaction of anticipation. However, as we also saw, it cannot predict our reaction of horror to experience machine cases. In contrast, it appears that the life trajectory theory can predict our reaction of horror, but it cannot predict our reaction of anticipation. Therefore, standard psychological continuity theory gets it wrong for the first virtual immersion case, but right for the second one. And, the life trajectory theorist gets it right for the first case, but wrong for the second case.

But things are not as they might at first seem. As I will now argue, the life trajectory

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<sup>32</sup> For details about ways these possibilities might be realized and their potential implications, see Chalmers (2010). Sauchelli (2017) addresses how such "life extending" techniques may or may not fit with certain narrative conceptions of what matters over time.

theorist can, in fact, predict the correct reactions to the second virtual immersion case. To see this, we need only reconceptualise what it means to exist in an external context. Our natural assumption is that these kinds of contexts must be identified with spatial temporal situations. But this assumption might be rejected if technology advances to the point of allowing for purely virtual interactions. In this case, the notion of a mind-independent external world need not involve connections to an ordinary physical environment. We could instead think of a purely virtual environment as mind-independent – as external – assuming that we have shared experiences of that virtual environment together with the ability to affect that shared environment in certain predictable and systematic ways. If this is how we understand immersion within a virtual environment, then we might still reasonably ascribe extrinsic properties to subjects in contexts like these. The life trajectory theorist could then say that the second case preserves what matters in survival after all.

The life trajectory theory is preferable to standard psychological continuity theory, at least with respect to virtual immersion cases as it predicts both our reaction of horror to the experience machine case, as well as our reaction of anticipation to collective interactive immersion.

## **5. Objections**

While there are several objections to the life trajectory theory, I can now consider only two. The first considers different ways fission might be realized that raise the possibility that it could preserve what matters in survival. The second considers whether permanent extrinsic properties have enough intuitive importance that a subject losing them truly loses what matter in survival.

## 5.1 Fission Scenario Variants

Thus far, fission has been rejected as a way of surviving just as good as singular survival on metaphysical grounds. But there might be other ways of fissioning that maintain everything that the life trajectory theory requires. If so, only one particular way of fissioning, rather than fissioning altogether, would be ruled out.

One non-standard fission scenario is explored by Martin (1995) known as “fission rejuvenation.” In this scenario, we suppose that when we are, say, 30 years old, a scientist offers us the opportunity to undergo fission, and to then continue our life as before. Meanwhile, our unconscious fission product remains physically preserved until our death, at which point this fission product, who has been having its psychological states updated via chip implants, awakens and picks up where we left off. We can imagine this continuing indefinitely. Again, we seem to have a case of fission, and one that meets the requirements of the life trajectory theory for what matters in survival. However, it is questionable whether this is truly a case of fission or simply one of sophisticated body cloning together with a kind of mental state transfer process. Describing the process that we might undergo at 30 as a case of fission is to already assume one’s conclusion – that fission can preserve what matters in survival – and the case therefore begs the question. That this is a true case of fission would need to be established before we could draw any conclusions about the life trajectory theory.<sup>33</sup>

## 5.2 Extrinsic Properties and What Matters in Survival

It may seem odd to say that having been born in a certain location at a certain time is something that would intuitively matter to us in survival. However, we must be cautious in

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<sup>33</sup> See Martin (1995) for reasons for thinking it truly is a case of fission.

the interpretation of the claim that what matters in survival is having certain q-properties. Although I do earlier offer some brief reason for thinking that such properties do intuitively matter, but without much defense. But this is of no significance, since the idea that what matters in survival is the continuation of some extrinsic properties is not driven by any claim this idea being intuitive, just like the belief that fission maintains what matters is also not so driven.

On the life trajectory theory, the consequence that we should care about the continuation of extrinsic properties is a consequence that follows from other intuitions we do have, like the intuition that we fail to have what matters in the experience machine case, because our connection to an external context is lost, and therefore so is our personhood, something that does intuitively matter in survival. To account for this intuition, it was then conjectured, not deduced, that part of what matters in our survival is the continuation of our life trajectory, an idea that was analyzed in terms of the continuity of certain extrinsic properties over time. Caring about such properties is, then, an implication of caring about being connected to the external environment, and remaining a person, not its starting point, again, just as caring about fission products is an implication of caring about psychological continuity. In other words, the closure principle for the intuitiveness-operator is false. Simply because a claim is intuitive, and some other claim follows, does not mean that the second claim is likewise intuitive.

## **6. Concluding Remarks**

I offer a theory, according to which, certain extrinsic q-properties must be maintained in order for a future subject to preserve what matters in the survival of a current subject. I argued that some of these permanent extrinsic properties are such that they – or rather,

their corresponding q-properties – can be possessed by no more than a single future subject, thereby offering a theory consistent with Parfitian singularism, assuming they are prepared to accept an externalist view of psychological continuity<sup>34</sup> As we also saw, the theory can accommodate other intuitions as well, those concerning cases of virtual immersion. Since standard psychological continuity theory cannot accommodate as many of our intuitions as the life trajectory theory can, it ought to be rejected in favor of the latter theory.<sup>35</sup> What matters in survival is more than the internal relations that hold between earlier and later subjects, external relations matter too. The life trajectory theory is an account of the role those relations play in having what matters.<sup>36</sup>

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<sup>34</sup> The position explored shares similarities with other views, but is still distinct. In particular, the externalist aspect of the life trajectory hypothesis is not new, and neither is the Parfitian view of identity. However, their specific combination is new. For comparison, Whiting’s (2002) work supports Parfitian singularism, but is driven by internalist considerations. In contrast, Lindemann’s (2014) work on personal identity is externalist, but hers is one focused on social relations.

<sup>35</sup> As a matter of fact, the theory itself could be construed as neutral on whether this is a theory of identity or of survival. However, to take it as a theory of identity would take someone with some pretty serious and controversial externalist leanings. Leanings I am certainly not prepared to take on. And, besides my project was to defuse Parfit – to focus on the issue of what matters in survival, not on identity.

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