

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” developed here not only rules out fission cases as those in which we preserve what matters, but also explains our reactions to different virtual immersion scenarios.

1. Introduction

The topic of this paper is personal identity over time, as well as Parfit’s alternative concept of what matters in survival – those facts concerning whether or not some subject in the future maintains what a person values about their current self, which enables that person to identify with the future subject.¹ Discussions of this topic generally involve offering a particular account of the nature of personal identity, or of what matters in survival, in contrast with other accounts. Some writers, for instance, argue for a bodily continuity theory, others for a social constitution theory.² The most popular and intuitive theories, however, hold that psychological continuity must be an essential component of any account of personal identity, or of what matters in survival – that in order for the existence of some subject in the future to secure our identity, or what matters in our survival, our psychology

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

² For one example of a bodily continuity theory, see Olson (1997). The origin of social constitution theories can be traced back, at least, to work by Mead (1913).

must persist in that subject in some form or other.³ A psychological continuity theory along these lines will, for the most part, be taken for granted in the following discussion. Our focus will be on issues within this theory, rather than on offering arguments in favor of the general approach. Specifically, we will begin with a challenge arising from Parfit's work (1971, 1984, 1995, 1999).

Parfit's challenge concerns the possibility of a person fissioning, a scenario 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. Parfit famously argued that, if we adhere to psychological continuity theory as an account of what matters in survival, which he thinks we should, then we must accept that fission scenarios preserve what matters just as well as cases in which we do not fission, so that only one future candidate is psychologically continuous with our present self. It seems to follow from this that the preservation of identity over time, our actual persistence, is not what matters in survival, since psychological continuity can be preserved in two distinct – that is, non-identical – future beings.

This argument of Parfit's poses a challenge for those who are sympathetic to psychological continuity theory, and to the idea that identity is not what matters, but who also want to reject fission cases as preserving what matters in survival. Let us refer to those who have this reaction as "Parfitian singularists."⁴

The challenge for a Parfitian singularist is to find some survival-mattering difference, between ordinary cases of singular survival and fission cases that is consistent with psychological continuity theory. What makes this problem difficult is that, on the face of it,

³ For the modern origins of psychological continuity theory, see Locke (1964).

⁴ For a Parfitian singularist view, though not put in those terms, see Whiting (2002).

products of fission can preserve psychological continuity just as well as products of singular survival, and it therefore appears that there is no reason to rule them out as candidates that fully maintain what matters in survival. For a Parfitian singularist, responding to this challenge requires examining the psychological continuity theory of what matters more carefully, and exploring whether something might be missing in this theory that could allow for a distinction between fission cases and ordinary cases.

In particular, we will focus here on what will be called “virtual immersion” scenarios – those in which a psychological subject is removed from their current spatial-temporal universe, though the continuity of their internally defined psychology is not compromised. The specific case of virtual immersion we consider first involves a situation in which only the psychological continuity of a particular subject is maintained, so that the subject’s experiences do not track the objective environment. What our reactions to this case will suggest is that existing within and tracking an objective environment is important in an account of what matters in survival, and that part of what is missing in standard psychological continuity theories is a focus on the extrinsic properties of a psychological subject.

This argument, in turn, will suggest that there should be an externalist component to the concept of what matters in survival. As we will see, an account incorporating such a component – described here as the “life trajectory” theory – can provide the Parfitian singularist with the resources to distinguish cases of fission from cases of ordinary singular survival in a principled way, as well as providing a proper explanation of our reactions to the virtual immersion scenarios.

The paper is organized as follows: We will begin, in the next section, by examining the possibility of, and motives for, taking up the position of a Parfitian singularist – for accepting that identity does not matter in survival independently of fission cases, but that at most a single future being can preserve what matters in survival. In Section 3, we will see what is wrong with standard psychological continuity theory, which motivates the life trajectory theory. This view is developed, and then, in Section 4, applied to fission and virtual immersion scenarios. Finally, we will consider a few objections to the view in Section 5.

2. Parfitian Singularism: Motivation

Parfitian singularism is a combination of two theses. The first is the Parfitian thesis that it is psychological continuity, rather than identity, that matters in survival. The second is the thesis that, even so, and contrary to Parfit, at most only a single future individual can preserve what matters in our survival. Both theses are introduced in this section.

2.1 Why Identity Does Not Matter in Survival

We begin by reviewing Parfit's original argument from fission for the conclusion that identity does not matter in survival. Parfit (1999) begins his argument by showing that what matter to us is psychological continuity, rather than bodily continuity. To do so, he asks us to consider the following hypothetical scenario: Suppose that in order to survive you require an operation that involves splitting your brain in two, disposing of one hemisphere, and then transplanting the other 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 as you existed prior to this operation and the being that exists afterwards. Many of us would feel that this procedure maintains what matters to us in survival. However, since physical continuity is

absent in this case, it cannot be physical continuity that matters; instead, it must be psychological continuity.

This initial thought experiment is supposed to show only that it cannot be physical continuity, but rather psychological continuity, that matters in survival. For the further conclusion that identity cannot be what matters either, Parfit invokes another thought experiment. We are asked, this time, to imagine that you undergo a procedure similar to the previous operation, with the exception that both hemispheres of your brain are now transplanted to separate bodies, each again qualitatively indistinguishable from your own. This thought experiment is supposed to show that psychological continuity, as Parfit conceives of it, can be maintained twice over, thereby establishing that psychological continuity alone cannot preserve identity.⁵ If either successor is identical to you, they both are, since the situation is symmetrical; but then, by the transitivity of identity these two distinct successors would have to be identical as well, which is impossible. But if psychological continuity does not preserve identity, and since we agreed that what matters in survival is psychological continuity, we can conclude that identity cannot be what matters.⁶

Of course, this argument for the conclusion that identity is not what matters in survival hinges on Parfit's idea that what matters in survival may be preserved in fission cases, while identity is not. But if Parfitian singularism is to be coherent – that is, if we are to

⁵ Williams (1976), preceding Parfit, also made this point in what he described as the “reduplication argument.”

⁶ While this is a rather brief treatment of Parfit's argument, the main point is to show that there is an issue concerning how to deal with fission, if one accepts psychological continuity theory. For more discussion of the details of Parfit's arguments, along with issues about interpretation, see Johansson (2010).

allow that fission may not preserve what matters – there must be other reasons for thinking that identity is not what matters. And there are. We will consider two here.

The first reason is straightforward. It is based on the observation that psychological continuity is a matter of degree, and therefore, for a psychological continuity theorist, if a later subject has a certain degree of psychological continuity with an earlier subject, then that later subject has what matters in the survival of the earlier subject. But, identity is not a matter of degree; objects are either absolutely identical or not.⁷ Therefore, if what matters is psychological continuity, and this is a matter of degree while identity is not, then what matters in survival cannot be identity.

The second reason is derived from Parfit's response to Butler's (1736) objection to Locke's (1694) memory theory of personal identity, the modern precursor of contemporary psychological continuity theory. According to Locke, a later subject is identical to, or is the same person as, an earlier subject just in case the later subject remembers having had the earlier subject's experiences. To this, Butler objected that, if a later subject in fact remembers having had the experiences of an earlier subject, this already presupposes that the two subjects must be identical. The background assumption underlying Butler's objection is that remembering is factive – genuinely having a memory of some particular event can relate a subject to that remembered event only in virtue of having experienced it. But if memory is factive in this way, so that having a memory entails that the subject possessing the memory must be identical to the subject that originally experienced the remembered event, it follows that, as a theory of personal identity, the memory theory begs the question.

⁷ In fact, Williams (1970) argues that this is a reason for rejecting psychological continuity theory as a theory of personal identity.

In response to this objection, several writers – most notably Shoemaker (1970) – have introduced a different notion of memory, one that is non-factive, and therefore not subject to Butler's objection. In Shoemaker's account, which Parfit draws on, these non-factive memories are described as "quasi-memories," or as "q-memories." The idea, then, is that a later subject's q-memories are indistinguishable from its predecessor's real memories, but they are not based on facts actually experienced by a previous subject strictly identical to the earlier subject.⁸

Drawing on this new concept of a q-memory, the Lockean can now say that a later subject is psychologically continuous with an earlier subject, and therefore has what matters for the earlier subject's survival, insofar as the later subject has the q-memories of the earlier subject. Since a subject can have something qualitatively indistinguishable from genuine psychological continuity without identity, the way is therefore open for the Parfitian to claim that preserving these states is all that could rationally be included in an account of what matters in survival. And, by a sort of generalization of this argument, we now can frame our second reason for rejecting identity as what matters in survival. The reason is simply that, even if certain components of psychological continuity, such as true memories, entail identity, there are qualitatively indistinguishable counterparts, such as q-memories, that maintain all that could rationally be wanted in having what matters in survival.

⁸ 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.

By relying on the previous notion, then, the Lockean can now say that a later subject is psychologically continuous with an earlier subject, and therefore has what matters for the earlier subject's survival, insofar as the later subject has the q-memories of the earlier subject. Since a psychological subject can have something qualitatively indistinguishable from genuine psychological continuity without identity, by invoking the notion of a q-psychological state, the way is open for the Parfitian to claim that preserving these states is all that could rationally be included in an account of what matters in survival.

2.2 Singularism

As we've seen, then, there are at least two considerations, apart the fission argument, that tell against the idea that identity is what matters in our survival, both developed in Parfit's work. But what about singularism, the thesis that, contrary to Parfit, at most one future individual can preserve what matters? Our central argument in favor of singularism falls out of our positive account, the life trajectory view, to be developed in the remainder of the paper. But it is worth noting that, even apart from the positive account advanced here, a commitment to singularism has been advocated or presupposed in a number of philosophical views. We mention six.

First, a very general consideration is provided by Martin (1998), also a Parfitian about identity's importance. The reason offered by Martin for singularism has to do with projecting ourselves into a fission-based future. For Martin, it is nearly, if not completely, impossible to conceive of doing so, unless we have only one candidate continuer with which to identify, thereby ruling out fission as a case in which we can have what matters.⁹ A second reason, provided by Whiting (2002), is similar to the previous one. According to

⁹ It should be noted that Martin himself does countenance certain forms of fission as acceptable, but not the form we are now considering.

Whiting, the Lockean claim that the self considers itself as such – the idea that what unifies subjects is that they are aware of themselves and take themselves to be one and the same being over time – is constitutive of what matters. And, she argues, we can take such an attitude only if there is just one candidate continuer in the future with which to identify, which again, entails that fission cannot preserve what matters. A third reason, inspired by Korsgaard's work (2003), is that rational planning itself.¹⁰ A fourth reason is provided by Johnston (2003), who believes that fissioning would not allow us to identify with any one particular person at all as especially important to us, a consequence that he believes is counterintuitive. Fifth, narrative views of the self, such as that developed by Schetchman (1996), are predicated upon the idea of telling a coherent story about a particular person's life. This would also be difficult to do if fission were an acceptable form of survival, since coherent autobiographical narratives require the presence of a single protagonist. Sixth, and finally, Wolf (1986) offers a number of practical reasons for favoring a single successor to a multitude of successors – how, for example, could we sensibly divide up a single individual's property rights or personal obligations among several successors?

3. The Life Trajectory Theory

Having motivated Parfitian singularism, we will now examine standard psychological continuity theory, and cast doubt on the idea that it provides the correct account of what matters in survival.¹¹ Further, the way in which the standard theory fails will suggest an alternative picture of what matters – the life trajectory theory.

¹⁰ Korsgaard ultimately rejects Parfitianism, even about identity, but this point, at least, is independent of that particular issue.

¹¹ Others also reject psychological continuity theory. See Olson (1997) and Williams (1970) and (1976) for arguments against it in favor a bodily continuity view. 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.

3.1 Virtual Immersion

The standard form of psychological continuity theory, succinctly characterized by Lewis (1983), consists simply of a commitment to similarity 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.¹² And, as Parfit claims, this is all there is to be said about what must hold in order for a psychological subject to have what matters in their survival. Besides endorsing this view of psychological continuity, Parfit (1999) also advocates for reductionism about persons – that all the persistence of a person could consist in is the continuation of either psychological states, as defined by Lewis, or physical states. As we know, Parfit then shows that what matters in our survival as persons is not physical, which given his reductionist dichotomy, allows him to conclude that what matters must be psychological continuity.

In order to see what is wrong with standard psychological continuity theory, we examine what its defenders must say about a certain kind of virtual immersion scenario.¹³ The scenario we consider 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 scenario,

¹² Lewis ultimately argues against Parfit's conclusion that identity does not matter in survival, but we not investigating those arguments here. Lewis is mentioned simply because of his clear characterization of what is required for psychological continuity. For details on problems with this idea, see Shoemaker (1970) who points out problems with the causal-connectedness requirement. For problems with the similarity requirement, see MacIntosh (1993).

¹³ In fact, we will eventually consider two such scenarios. As we'll see, the psychological continuity theorist must say, in both cases, that what matters is fully maintained. Together, these two cases help us understand why psychological continuity theory fails – its sole focus on internal relations among mental states.

choosing to be virtually immersed, to enter the machine, involves choosing to identify oneself with a sort of solipsistic being whose experiences do not track the objective environment, but instead, are entirely illusory.

Let us suppose that a subject who enters the experience machine maintains psychological continuity in the sense that there is only a gradual progression of change in the subject's mental states, so that no two adjacent states are radically different, and in addition, there is the appropriate kind of causal or counterfactual dependency of current mental states on previous mental states. In that case, entering the machine does not compromise or threaten a subject's psychological continuity, at least on Lewis's understanding of this concept. And so, for a psychological continuity theorist, entering the machine would thus preserve everything that matters for survival.

Still, in spite of the fact that, in entering the experience machine, a person would maintain their psychological continuity, many of us would recoil in horror at the possibility, 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 a fate in many ways like death.¹⁴ What this reaction suggests is that we may have doubts about whether the mere persistence of the psychology of a particular subject is sufficient for maintaining what matters in survival. The reason for these doubts, in this case, is that entering the experience machine threatens the subject's personhood altogether – and of course, preserving a subject's personhood is something we might reasonably think of as

¹⁴ This horror should not be understood as directed at what it would be like to be in the machine, but instead as directed at the very prospect of entering it. After all, for many of us, the prospect of death is horrifying, but this horror, arguably, is directed at what will happen to us after that event. We fear the event itself because it entails the end of our existence. Likewise, the explanation offered here for why we regard the event of entering the experience machine with horror is that it entails the cessation of our personhood, though clearly, not the cessation of our psychologies.

required by definition, since what we are exploring, after all, is the concept of personal identity.¹⁵

If a subject's personhood must be maintained in order for that subject to have what matters in survival, and the experience machine threatens personhood, then this shows that one criterion for maintaining what matters in survival is that the subject in question must not inhabit an experience machine, or participate in any other brain-in-a-vat like scenario, in which that subject's experiences are radically non-veridical. This thought experiment thus raises a question: Does our personhood depends upon our continued existence within, and the persistence of our relations to, a particular objective environment? The idea explored here is that the answer is yes – our personhood depends on the continuity, not just of our subjective psychological states, but of our objective relations to aspects of our objective contexts.

According to this interpretation, then, the experience machine case illustrates that, in addition to all of the standard psychological requirements, there are externalist constraints on what matters in a person's survival over time. And this, in turn, suggests a hypothesis. The hypothesis is that the preservation of what matters depends, not just on continuity of the subject's psychology in an internalist sense, but also on the continued living of that subject's life, which involves being embedded in a particular objective environment. It is this continued living of a life that we will understand as constituting a person's life trajectory. Echoing Strawson's (1966) notion of a person as the path of subject of experience through an objective context, a life trajectory can be defined here as the continuous path of a psychological subject through an objective context, a path created and

¹⁵ There are many reasons for believing that psychological subjects in brain-in-a-vat like scenarios are not persons: they lack epistemic, practical, and moral agency, for example.

maintained by the subject's being appropriately related to that environment. The life trajectory theory thus incorporates the idea that persons are fundamentally, and inextricably, tied to their external environments, a fact that, as we saw, can be illustrated by completely removing them from such contexts.¹⁶

3.2 Life Trajectories as What Matter in Survival

Having introduced the life trajectory theory, we now develop the view in more detail. The distinctive feature of this theory, of course, is that in order to preserve what matters in survival for some subject, a future being must not only maintain psychological continuity in the standard sense, but also continue that subject's life trajectory. What is it, though, to continue a subject's life trajectory? As we will understand this idea, it requires continuity with respect to the extrinsic properties that individuate that subject within a particular objective context. The life trajectory theory thus has as a necessary condition that, in order for a potential successor to have what matters in an initial subject's survival, that potential successor must continue to possess some defining collection of that initial subject's extrinsic properties. Developing the theory, then, requires us to answer two questions: first, what is the appropriate set of defining properties, and second, how does a potential successor, who is not identical to the previous subject, continue to maintain those properties?

To begin with the first question: A person's life involves facts about a psychological subject's relations to an objective environment over time. Many of those facts are unique to a particular life trajectory, such as those that locate the subject at a specific place and time. For example, my life is the life of a psychological subject who is her father's second-

¹⁶ This idea is also put forward in McDowell (1997).

born child, a fact that individuates the beginning of my life trajectory as well as continuing to individuate it in virtue of my continuing 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 at a specific time and place, 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. We individuate life trajectories in the same manner as we might individuate the trajectory of any other object over time.

The extrinsic properties that subjects possess in virtue of having a life trajectory involve their relations to an objective context. 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. These extrinsic properties will, depending on the nature of the relation, come in different flavors: temporary, long-standing, and permanent. Examples of these kinds of extrinsic properties, respectively, include: my now drinking a cup of coffee, and of composing this paper; my owning three dogs, and of living in Upstate New York; my now being my father's second-born child, and of being the author of this paper.

While extrinsic properties are held in virtue of facts about relations to an objective context, not all of them depend upon current relations to that context. Some depend merely on their having originated in relations between a subject and their objective context. Examples of these properties include the properties of being my father's second-born child and being the author of this paper. Speaking more abstractly, the fact that some of a subject's extrinsic properties do not depend on the current existence of the objects of those properties, and in virtue of which they have these extrinsic properties, explains why once

one has acquired these properties, they are held permanently. 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.

Now which of a subject's extrinsic properties, if any, must be maintained in order for that subject's life trajectory to continue? Well, surely it cannot be the temporary properties, since these are properties that come and go, that begin to hold and cease to hold, all the time, without threatening a subject's identity. If these were the properties that had to be maintained, no one's life trajectory would continue any longer than it takes to lose one of these more ephemeral properties, such as the time it takes to finish drinking a cup of coffee. The same can be said of more long-standing properties. Even if they do characterize a life trajectory over much longer periods of time, they still are properties that a subject can lose without ceasing to exist. The only properties that can fully individuate a life trajectory, then, are those that a subject has permanently. It is this collection of permanent properties, therefore, that can be taken as defining a subject's life trajectory, and it is this collection that must be maintained by any later subject that can legitimately preserve what matters in the survival of an earlier subject.¹⁷ Furthermore, the requirement that there must be continuity in a subject's permanent extrinsic properties is also a naturally plausible idea. It is, at least in part, the fact that subjects have these permanent properties that allows subjects to have a sense of continuity over time.

We now turn to our second question. Having identified the set of properties that must be maintained by a later subject in order to preserve what matters for a current subject, we

¹⁷ 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.

now ask: how could a later subject maintain these properties?

In answering this question, we face a difficulty remarkably similar to that considered previously in our discussion of Locke's memory criterion of personal identity – the suggestion that a later subject can count as the same person as an earlier subject just in case the later subject remembers having had the earlier subject's experiences. As we recall, Butler objected to this criterion on the grounds of circularity, arguing that, if a later subject indeed remembers the experiences of an earlier subject, this already presupposes that the two subjects must be identical. And, as it turns out, the life trajectory theory – which requires that the later subject must preserve the permanent extrinsic properties of an earlier subject – can be argued to presuppose identity in just the same way, since for some extrinsic properties, the fact that a later subject possesses these properties entails that that later subject must be identical to the previous subject that had them. To illustrate, suppose you possess the property of being the author of a certain paper. Then on the life trajectory theory, anyone who can continue your life trajectory must possess that property as well. But only the person who actually wrote the paper can possess that property, and that person is you. It seems, 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.

As we noted in our previous discussion, Parfit responded to Butler's objection, in the case of psychological continuity, by drawing on Shoemaker's notion of quasi-memories, or q-memories – non-factive episodes that are indistinguishable from actual memories to the experiencer, but which are not based on that subject's actual experiences. On Parfit's view, an adequate notion of psychological continuity could be defined in terms of preservation of these q-memories, without appealing to actual, factive memories. And in just the same way

that Shoemaker and Parfit are able to formulate a non-circular notion of psychological continuity based on q-memories, rather than actual memories, we suggest that the life trajectory theory can likewise be refined, to escape circularity, by appeal to "quasi-properties," or "q-properties," rather than ordinary properties.

Given this refinement, the life trajectory theory about what matters in survival is composed of two requirements. First, if a future subject is to preserve what matters in a current subject's survival, then that future subject will have to maintain psychological continuity with the current subject, in the sense discussed earlier. And second, if the future subject is to preserve what matters, then that future subject must also continue that subject's life trajectory, in the sense that it possesses q-properties corresponding to the defining extrinsic properties of the current subject.

But what are these q-properties, and under what circumstances does a future subject possess a q-property corresponding to a property of a current subject? The intuition is simple: a potential continuer of a previous subject has the q-properties corresponding to the previous subject's properties just in case that potential continuer relates to the external world in a way qualitatively identical to the way that the previous subject relates. But, this is not yet a precise definition or explanation. Making this intuition precise requires some discussion of the modal properties of both the potential continuer and of the previous subject.

Suppose that, in the actual world i , a subject A ceases to exist at moment t , and that another subject B, psychologically continuous with A, comes into existence. In order for it to be true that subject B has the q-properties corresponding to A's in i , two conditions must hold. First, at moment t , B must be qualitatively indistinguishable from A with respect

to having had A's extrinsic properties prior to and at moment t , and second, B must be qualitatively indistinguishable from A with respect to A's unrealized future extrinsic properties.

Considering the first condition, what could make B qualitatively indistinguishable from A with respect to having had A's past extrinsic properties? Well, consider an alternative possible world j , just like the actual world except that, even prior to the moment t , A had never existed at all, but that, instead, the subject B has duplicated both the moment-by-moment psychology and the extrinsic properties of A up until the moment t . Then we will say that, for each property P that the subject B possesses at the moment t in the alternative world j , B possesses the q -property corresponding to P at the moment t in the actual world i .¹⁸ Up until and including the moment t , in other words, subject B has the q -properties corresponding to the extrinsic properties of subject A just in case B could have had the very same properties A did, if A had never existed.

Now considering the second condition, what could make B qualitatively indistinguishable from A with respect to A's unrealized future extrinsic properties? Well, the answer, in this case, is somewhat complex, if we assume that A could have had several different futures in which A has diverging extrinsic properties in those different futures depending upon what A does. This makes it unclear what must be true of B in order for B to be qualitatively indistinguishable with respect to A's unrealized future extrinsic properties.

Let us consider instead, then, which extrinsic properties A has in all possible futures that A

¹⁸ Of course, unless we assume some form of determinism, the paths followed by subject B in worlds i and j might diverge from the moment t on, so that the ephemeral properties of the subject in these two worlds could differ, perhaps considerably. Nevertheless, as long as we can assume that the past is fixed, all the extrinsic properties possessed by B at the moment t in world j must, from that point on, remain with B as permanent properties, and so the corresponding q -properties must remain permanent properties of B in the actual world i as well.

could have had after moment t , and let us say that B must have only the future extrinsic q -properties corresponding to those unrealized future extrinsic properties that A must have in all of A 's possible futures. Now which properties are these? Assuming a fixed past, the minimal answer is relatively straightforward. The extrinsic properties that A has in all potential futures are all and only the permanent extrinsic properties that A had prior to moment t in the actual world i . All that is required then for B to be qualitatively indistinguishable from A with respect to A 's unrealized future extrinsic properties, then, is that there is a world in which B actually has only of the extrinsic properties that A must have after moment t . Having settled this issue, we can now see that B already satisfies this condition in world j , since in world j , B already has all of A 's permanent extrinsic properties simply by having a past just like A 's in the actual world i .

The previous reasoning can be illustrated by returning to our earlier example. Suppose, now, that A represents you, that you cease to exist at the moment t , but that, at that very same moment, a distinct but psychological continuous potential successor B comes into existence; and consider some paper written by A before t . Now, as we have seen, B cannot, at some moment t' later than t , possess the defining property of being the author of that paper, since, in the actual world, that paper was written by A , and by assumption, B is distinct from A . Now consider an alternative possible world of the kind just described, in which B mirrors the psychology and extrinsic properties of A up until the moment t . Since, in our alternative world, B possesses the property of having written the paper, it follows by our definition of q -properties, that B possesses the corresponding q -property of having written the paper in the actual world.

This example illustrates our general idea: a potential successor B continues the life

trajectory of A just in case B possesses q-properties corresponding to the defining properties of A, and so can interact with the world just as A would have, if A had survived.

4. Applications: Fission and Virtual Immersion

Having set out the life trajectory theory, we can 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, we return to our previous example involving the permanent extrinsic property of being the author of a certain paper. Consider, once again, a psychological subject A, who represents you, and that you authored a certain paper. Now consider yourself at a particular moment t , after having done so, and suppose that at t , you undergo a Parfitian procedure that ends, not with the creation of a single psychologically continuous potential successor B, but instead with the creation of two subjects B1 and B2, both psychologically continuous with, and yet distinct, from both you and one another – that is, suppose that you fission. Can these two potential successors both have what matters to you in your survival?

Well, according to the life trajectory theory, they can do so only if, in addition to maintaining psychological continuity, both of these individuals continue your life trajectory. And what this means, on this analysis, 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, you 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 the paper.

But do fission products have the q-property of having authored the paper? Well, relying on our previous account of q-properties, 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 prior to and at the moment *t* in the actual world, and also those properties that A would have had if A had survived. Now ask: is it possible for both B1 and B2 to simultaneously have the property of being the author of a certain paper? The answer, of course, is no. Two individuals, by definition, cannot both be the author of a certain paper. True, both fission products are psychologically continuous with something that once was the author of a certain paper – this is not something that just anyone can claim. But having once been the author of a paper no more counts as continuing that property than would merely having once had all of my memories count as continuing my psychology. Therefore, in this particular case, neither fission product can preserve what is required to maintain what matters in survival. The best they can do is sustain the past tense version of this property, and according to the life trajectory theory, this is not sufficient for having what matters in survival.

The fission sympathizer might respond, however, by arguing that the fission products can, in fact, preserve the property of being the author of the paper in some sense, since both B1 and B2, when considered independently, could have A's authorial status. As we saw, it is not possible B1 and B2 to be the author of a paper, since there are now two

potential continuers. It is, however, possible that B1 is the author of the paper, and it is also possible that B2 is the author of the paper. The fact that these possibilities hold of each fission product might be thought to confer a kind of authorship property.

Unfortunately, the previous move is defeated by considerations about the “character” of properties. The fact that a property has a particular character at least entails certain qualitative ways of being for the subject that has that property. For example, being tall might entail having a height greater than that of others, being able to reach things that others cannot, and being able to see better in a crowd. In the case of extrinsic properties, those qualitative ways of being are maintained with respect to the objective environment. Owning a book might entail being able to give that book away or sell it, or being the party who can lend that book to a friend, or having the right to write notes in its margins. Likewise, being the author of a paper also has a certain character. If you are the author of a paper, then you have authorial status by having a property with the character of sole authorship, and this entails conducting yourself in certain ways. For instance, as a sole author, you can take sole credit for the ideas contained within the paper, you will recall having written the entire paper, and only your name will appear as the author of that paper.

Now return to our fission products, B1 and B2. Here, as we have seen, it is not possible for both of these individuals to have the q-property corresponding to the actual property of being an author, but only an analogue, such as the q-property corresponding to the property of being a co-author. The character of the property of being a co-author is strikingly different from that of being an author. If you are a co-author of a paper, for example, you cannot take sole credit for the ideas appearing in that paper, nor will your name be listed as sole author of the paper. It turns out, therefore, that if we try to ascribe a

q-property corresponding to authorship to our two fission products, B1 and B2, we must ascribe that property in such a way that, while it may be authorial, it would have to have a different character from the original property.

The upshot is this: For certain permanent extrinsic properties, such as authorship, it is possible for fission products to have only past tense or shared counterparts, neither of which qualifies as the corresponding q-property. Fissioning, then, violates the 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 we have seen that fission cannot preserve matters in survival, we 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 virtual immersion.

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 solipsistic and de-correlated with facts about an objective context. The 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 objective context, and therefore suffered the loss of our personhood.

But now, instead, consider the anticipation we might feel if all psychological subjects could rid themselves, en masse, of the shackles of bodily decay by immersing their psychologies within a 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.¹⁹

Earlier, then, we saw that our reaction to the experience machine, to being virtually immersed, was one of horror. But in this more recent case, as just noted, we might also have a reaction of anticipation, viewing the possibility of virtual immersion as ensuring our immortality. Standard psychological continuity theory predicts that we do have what matters in cases of virtual immersion, and therefore can predict our reaction of anticipation, but it cannot predict our reaction of horror. 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's gets it wrong for the first virtual immersion case, but right for the second one. And, it appears that the life trajectory theorist gets it right for the first case, but wrong for the second case.

However, as it turns out, the life trajectory theorist can, in fact, predict correctly for our second virtual immersion case. To see this, we need only reconceptualise what it means to exist in an objective context. Our natural assumption is that an objective context must be identified with the spatial-temporal world. But this assumption might be rejected if technology advances to the point of allowing for purely virtual interactions. In this case, the notion of objectivity would not necessarily involve connections to an ordinary physical environment. We could instead think of a purely virtual environment as objective, assuming 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

¹⁹ For details about ways we might realize this possibility and its 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.

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 previous considerations suggest that the life trajectory theory is preferable to standard psychological continuity theory, because it has the resources to predict our reactions to the two different ways considered here of being virtually immersed – both our horror at the prospect of life in the experience machine and our acceptance, even delight, at the prospect of eternal life in a shared interactive virtual scenario. Standard psychological continuity theory, in contrast, accommodates only our delight, not our horror.

5. Objections

We will now consider three objections to the views expressed here. The first addresses the issue of whether there is any point at all in offering a metaphysical theory of what matters in survival once an identity theory has been rejected. The second questions whether there is any real disagreement between the standard psychological continuity theorist and the life trajectory theorist. The last considers different ways we might realize fission that raise the possibility that it could preserve what matters in survival.

5.1 Theories of What Matters in Survival

Suppose we accept the claim that identity does not matter in survival. The question of what it is for something to matter in survival then becomes pressing. Without an account of this concept, the debate about what matters in survival threatens to devolve into an entirely value-laden affair, making any serious metaphysics of the nature of persons a pointless enterprise. That is, if we reject identity as what matters in survival, it might be tempting to argue that there is nothing in principle barring us from taking anything that matters in a life

worth living as a survival-mattering property.²⁰ Intuitively, however, there is a difference between what matters in a life worth living and what matters in survival.

To illustrate the previous worry, consider a person who cares deeply about the preservation of one of their fingernails. If rejecting identity as what matters in survival threatens the distinction between a life of value and survival, our fingernail-caring person could claim that they would cease to have what matters in survival upon its loss. But this seems wrong. For this person, it is not what matters in survival, but instead what makes a life worth living depends upon the presence of a fingernail. Or consider a more plausible example in which a person believes that they would no longer have what matters in their survival if they could not pursue their career of choice. However, having a certain career is not intuitively part of what matters in survival. Instead, this particular person's belief expresses hyperbole. Really, what the person means is that their life would be valueless if they lacked a certain career, not that they would lack what matters in survival.

Traditional wisdom has it that what marks the distinction between a life worth living and survival is the difference between maintaining identity or not, but of course, Parfitians about identity do not have recourse to this way of drawing the distinction. Fortunately, this is not the only way to draw the distinction that still gives it some metaphysical bite.

Suppose we understand caring about what matters in our survival – the idea that whether or not some subject in the future maintains what a person values about their current selves that enables that person to identify with a future subject – in the following way: if a care counts as a potential care about survival, then it must be a care about a property that is part of an account of the metaphysical nature of persons. In contrast, cares that track properties that are not part of an account of the nature of persons – cares the

²⁰ Thanks to Michael Watkins for pushing me on this distinction.

removal of a fingernail, for instance, or the end of a particular career path – track facts about a life worth living, not about what matters in survival. In other words, a necessary condition on a care counting as a care about survival is for it to be directed, in some way or other, at a characteristic that is part of an account of the metaphysics of persons.

While this approach does not rule out a role for our intuitions about what matters in our theories of persons, it does put some needed constraints on how they should count.²¹ Given these constraints, we must limit ourselves, in asking about what matters in survival, to facts about the metaphysical nature of persons. Because our cares about survival proper must be fundamentally concerned with the nature of persons, this methodology vindicates developing a metaphysics of personhood despite failing to care about identity. That is, there is still a point to doing the metaphysics of persons even if one is a Parfitian about identity mattering.

5.2 Understanding the Fission Problem

Another potential objection to the life trajectory theory is that there is really no disagreement between the Parfitian singularist and the fission sympathizer. After all, the fission sympathizer can consistently allow that there are some differences between fission cases and cases of singular survival, and argue that merely pointing out some of these differences does nothing to disprove the idea that fission could be a form of survival. The issue, then, is not simply to find a difference between fission and singular survival. Rather, according to the fission sympathizer, it would need to be shown that fission is not simply different from singular survival, or even less preferable, but that it is, in fact, a fate equivalent to death.

²¹ Even so, it is still difficult to cleanly distinguish between cares about survival and cares about a life worth living given that the correct account of the metaphysics of persons is unknown. For this reason, intuitions must be considered carefully and in tandem with multiple hypotheses about the metaphysics of persons.

However, this way of thinking about the fission problem fails to respect the distinction just made between caring about what matters in survival and caring about a life worth living. Of course, anyone can agree that there might be aspects of a life worth living absent in the fission case that are not absent in the any ordinary case of survival. What a fission sympathizer cannot admit, however, is that there are survival-mattering metaphysical differences between fission cases and ordinary cases. After all, the fission scenario was compelling to psychological continuity theorists as a case of survival just as good as ordinary survival because it was thought that there were no metaphysical differences between those cases, apart from the failure of identity preservation. But, on the life trajectory theory, there are in fact deep metaphysical differences between cases in which we fission and those in which we do not, having to do with the continuation of a life trajectory. On the life trajectory theory, it is not merely that the stuff of a life worth living is missing in fission cases, it is that there are survival-mattering metaphysical differences between cases in which we fission and in which we do not, differences that have to do with the nature of personhood, and with what matters in survival.

5.3 Fission Scenario Variants

So 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.

Suppose a subject's entire world fissions, so that we have exact duplicates of both the subject and their environment.²² In such a case, it would appear that the two fission products, now existing in separate worlds, would both be psychologically continuous with

²² Thanks to Eric Schwitzgebel for pressing me on this.

their predecessor, and could also each be said to continue their predecessor's life trajectory. Therefore, everything that the life trajectory theory requires for maintaining what matters in survival is preserved, and yet in a sense, this is a fission scenario. What should the life trajectory theorist say about such a case? In fact, the case strains our intuitions. The only thing to say at this point is that the life trajectory theory applies to subjects within a world, not necessarily to cases in which a subject's entire world fissions. That's a different question to explore, on a different occasion.

Another 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 of sophisticated body cloning. That this is a true case of fission would need to be established before we could draw any conclusions about the life trajectory theory.

6. Concluding Remarks

This paper develops a position according to which, in order for a future subject to preserve what matters for the survival of a current subject, two conditions must be met. The first is the familiar condition that the future subject must maintain psychological continuity with the current subject. The second is motivated by the intuition that, in order to count as a person

at all, a subject must exist within and track an objective context. This intuition is captured by our second requirement, according to which, to preserve what matters, a future subject must continue the life trajectory of the current subject – that is, as we have analyzed this proposal, the future subject must also continue to possess q-properties corresponding to a defining collection of the current subject's permanent extrinsic properties.

Some of these permanent extrinsic properties, as we have seen, are such that they – or rather, their corresponding q-properties – can be possessed by no more than a single future subject, so that no more than a single future subject can continue a current subject's life trajectory. Since preserving what matters requires continuing a life trajectory, it follows that this position supports Parfitian singularism, the view that, even though identity is not what matters, at most a single future individual can preserve what matters.

This position explored here has similarities to other views from the literature but is distinct. In particular, while the externalist aspect of the life trajectory hypothesis is not new, and neither the Parfitian view of identity, of course, the specific combination of these two theses developed here is new. For comparison, consider Whiting's (2002) work, which also supports Parfitian singularism, but is driven by internalist considerations. According to Whiting, what makes non-branching psychological continuity preferable to continuity resulting from fission scenarios, or branching continuity, is that the former allows an attitude of self-ownership or self-concern, constitutive of what matters, towards non-branching future stages of a psychological subject. Both Whiting's position and that developed here, then, allow for Parfit's views on identity, but only the present position, with its emphasis on the life trajectory hypothesis, rejects fission scenarios by appealing to externalist factors. Another useful comparison can be drawn to Lindemann's (2014) work on personal identity. While

Lindemann does argue for an alternative externalist view of selves that is psychological in nature, the picture she develops is a narrative social constitution account. The life trajectory theory, developed here, differs from hers by emphasizing the importance of non-social relations as well in an account of what matters in survival.²³

It is important to be cautious in interpreting the position being offered here. Specifically, the position is not driven by the intuition that what matters to us in our survival is the continuation of certain extrinsic properties. Rather this position should be seen as a consequence of the view that, in caring about survival, we must also care about these properties, just as it is a consequence of Parfit's view that we should believe that fission is a form of survival that preserves what matters. For Parfit, this consequence followed from the intuition that what matters is psychological continuity. On the life trajectory theory, the consequence that we should care about the continuation of extrinsic properties is supposed to follow from our intuition that we fail to have what matters in the experience machine case, where our connection to an objective context is lost. 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 here as the continuity of certain extrinsic properties over time. Caring about such properties is, then, a consequence of the overall view, not a starting point.

In addition to explaining our troubled relationship to fission cases in a way consistent with Parfitian singularism, the life trajectory theory also explains the different reactions that

²³ Notice too that while the life trajectory account is inspired by Strawson's (1966) idea of thinking of persons in terms of their paths through an objective context, the life trajectory hypothesis will prove to differ significantly in its commitments about what counts as existence within an objective context. Lastly, the life trajectory view differs from McDowell's (1997) non-reductionist externalist thesis, which claims that we must include objective contexts in an account of persons, in that it accepts Parfit's reductionism.

we, as psychological subjects, have to different ways of understanding the possibility of virtual immersion. Some variants, those in which we exist within and track an objective context, we excitedly anticipate, exactly as the life trajectory theory predicts we should. Others, in which we are solipsistic subjects misrepresenting the facts of the objective environment, as in the experience machine, are rightly viewed as threatening an important part of what matters to us in our survival – the continuation of our life trajectories over time.²⁴

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