

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

Abstract: In this paper, I argue that standard psychological continuity theory fails to account for an important feature of what is important in survival. I offer a theory that can account for this and that avoids two other implausible consequences of standard psychological continuity theory.

1. Introduction¹

Most of us have the intuition that we, as persons, persist over time — that despite changes in our bodies or our personalities, some relation holds between the various ways we once were to the way we are now that makes us one and the same person.² In other words, we believe that our identity can be maintained over time. But what allows for this, or what makes this true? From a scientific point of view, it is reasonable to believe that if persons are anything, they are psychological and physical entities. On this world view, then, personal identity can be sustained only in virtue of the relations between either physical or psychological states of a person over time. One of the main questions that then gets explored is whether it is our psychological states or our physical states that are more important in our survival over time.

While I accept the view that it is our psychological states that are more important, I do not accept the idea that all psychological accounts are equally good. Specifically, I claim that at least one psychological view — the standard version — cannot accommodate the

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

² This assumes that the puzzle about whether change over time is possible has been resolved, and resolved in favor of a relational theory of identity preservation over time.

idea that one of the things important to us is not only that we survive, but that we survive as persons. I argue that this ought to be accommodated, and that therefore we need a different psychological account of what is important in survival. I offer a view that can capture more of the features we take persons to naturally have than can the standard view, and that therefore, this alternative captures more of what is important in survival. The view has other positive aspects as well, since it also lacks certain other implausible consequences of the standard view, as well as being able to explain certain cases the standard view cannot.

2. Why Relations Between Psychological States Are Most Important in Survival

The most frequently accepted idea about what is most important in survival is that the view that our psychologies must persist over time — that we are psychologically continuous over time. This view holds that when we have the right kinds, or enough, connections between the psychological states we once had and the psychological states that we now have, we are psychologically continuous beings, and this is sufficient for our persistence over time as one and the same person.

One of the most convincing arguments in favor of psychological continuity theory is offered by Parfit (1999). To prove that psychological continuity is what is most important in survival, 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 what has become the unhealthy hemisphere, and transplanting the healthy hemisphere into a body qualitatively indistinguishable from your own. Assume one hemisphere can support your previous psychology on the whole. That is, the post-operative person will be psychologically continuous with the pre-operative person. As Parfit, I believe correctly, notes

most of us would agree that this procedure maintains what matters most in survival. And this shows that it is psychological continuity, not physical continuity that matters in survival.

3. Psychological Continuity Theory and The Failure to Survive

Despite the intuitiveness of psychological continuity theory, and despite how compelling Parfit's argument for it may be, it has several problems. At least one particularly worrisome problem is that it actually fails to fulfill its purpose. While popular, it becomes clear rather quickly, given two well-known separate observations, that this theory cannot serve as a theory of personal identity. These observations consist in noting that psychological connections can be duplicated, and that they are also a matter of degree.³ Each of these observations serves as an independent reason for rejecting psychological continuity theory as a potential theory of personal identity.

The proof that psychological connections can be duplicated comes from considering what are called "fission" scenarios, which are, again, best described by Parfit. These are scenarios 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. Now consider the following twist on Parfit's previous thought experiment. Once again, suppose you are to undergo some procedure similar to the previous one, except that this time, both hemispheres of your brain are transplanted into two separate bodies, qualitatively indistinguishable from your own. Now, which of the two of these persons is you? It seems wrong to pick either of them, since this would be arbitrary. It also seems wrong to say they are both you, since two things cannot be one and the very same thing. Last, it also seems wrong to say that they compose a single entity that is you, since the two fission products are

³ See Schetchman (2001) for more detailed discussion.

clearly separate persons. It is for this previous reasons that Parfit paradoxically concludes that identity is not what matters in survival — that actually persisting into the future is unimportant. Surviving does not, or should not, really matter to us. This follows from the fact that we earlier agreed that what mattered most is psychological continuity. Since fission products maintain this with respect to the original person, they therefore maintain what matters in survival, but because they cannot be identical to you, it follows that it cannot be identity that matters in survival (1984: 261-265).⁴

The second observation — that psychological connections between earlier and later ways of being a person are a matter of degree — shows that psychological continuity, if it expresses an equivalence relation at all, does so only as a matter of stipulation, in virtue of introducing an arbitrary cut off for the number of connections that constitute continuity over time. However, objects are not identical by stipulation, but as a matter of metaphysical fact. Therefore, since we agreed that psychological continuity was what mattered most in survival, and it cannot express a true identity relation, identity cannot be what is most important in survival.⁵

Accepting the previous consequence leads to a shift in focus from strict theories of personal identity to looser theories of what matters in a person's survival. These theories are "looser" than theories of identity because survival-mattering relations need not be equivalence relations. But what is it for something to matter in survival if not identity?

⁴ The fission case was originally introduced by Wiggins, and subsequently discussed in his (1980). Williams (1976), preceding Parfit, also made this point in what he described as the "reduplication argument."

⁵ 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).

Generally speaking, something that matters in a person's survival is sustained just in case two separate conditions hold.

What Matters in Survival

(1) A later person B has what matters in the future survival of an earlier person A just in case the relations that hold between A and B are such that their presence allows A to identify with B in the same way as they would if A really was B in the future.

(2) An earlier person A has what matters in the past survival of a later person B just in case the relations that hold between A and B are such that their presence allows B to identify with A in the same way as they would if A had really been B in the past.⁶

The suggestion is that there is something qualitatively indistinguishable that can be maintained as what we could have had had we actually persisted in the normal way. If this seems unpalatable, well, it is. But Parfit's challenge is to offer something in the way of an argument that identity is what really matters in survival, while remaining consistent with our initial judgements concerning psychological continuity theory. Parfit sees no way to accomplish this, and I am inclined to agree. Therefore, whatever we thought we were doing in offering theories of personal identity, must now give way to offering theories of what matters in survival.

The question now is: how does the standard account of psychological continuity — requiring both similarity between a subject's earlier and later adjacent mental states, and causal or counterfactual dependency of that subject's current mental states on its previous mental states — fare as a theory of what matters in survival?⁷ I will now argue that it misses

⁶ 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), Perry (1976), and Unger (2003), among others. It should be noted that Parfit is not consistent in his use of the term 'survival'. 'Survival' sometimes stands for persistence (1984), while at other times, he drives a wedge between the two concepts (1971). I will follow the more natural (1984) use.

⁷ See Lewis, 1983 for this characterization. See Shoemaker (1970) who points out problems with the causal-connectedness requirement. For problems with the similarity requirement, see MacIntosh (1993).

something fundamental for what matters in survival. Later, I propose an expansion of psychological theory that accommodates what the standard theory cannot.

4. Survival and Missing Person Cases

To begin to see what's wrong with standard psychological continuity, I claim that what matters in survival includes more than the simple kind of psychological continuity put forward in the standard account, it also matters to us that our continuer survive as a certain kind of entity — as a person.

To show that the standard account of psychological continuity cannot accommodate the idea that being a person matters in survival, I offer a counterexample, which comes in the form of a familiar case, due to Nozick (1998), called the “experience machine” — a particular example of a species of what I call “virtual immersion” cases, in which psychological subjects are isolated from their spatial-temporal contexts — free to think, but not to participate in a life. The experience machine is 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, choosing to be virtually immersed, to enter the machine, involves choosing to identify oneself with a being whose experiences are entirely illusory. Many of us, I believe, would recoil in horror at the decision to enter it, viewing the persistence of the thing in it as a mere simulacrum of what that subject once was, and therefore viewing that subject's entrance into the machine as an existential threat. This particular case of virtual immersion, then, shows that persons require more than simple cognition to have what matters.

Standard psychological continuity accounts cannot explain this feeling of horror because the being in the experience machine satisfies both of the requirements of their

standard account of what matters in survival — the being in the machine maintains enough similarity between adjacent psychological states, and their current mental states depend upon their previous ones. Because the being in the experience machine satisfies both of these criteria, they therefore have what matters in survival.

My own proposed explanation for our horror at entering the machine is that it entails the loss of a certain property necessary for having what matters in survival — that of being a person. As I will argue, being a person requires more than merely having psychological states that are connected over time. Three questions now need an answer: first, why believe that the being in the experience machine is not a person? Second, why believe that standard psychological continuity theory must accept that the being in the experience is a person? And third, why agree that personhood is important for having what matters in survival?⁸

My answer to the first question is that it is only if we believe that persons are to be understood on a Cartesian model — as fundamentally a thinking being. And this, I claim is simply an implausible dogma that needs to be eradicated. My response to the second question is to argue that standard psychological continuity theory subscribes to this theory. And my response to the third question is simply to illustrate the point that being a person matters in survival by using a particular thought experiment, along with pointing out that the idea that maintaining personhood matters in survival is something we already accept in our everyday practices. None of these responses are conclusive, but the hope is that they at least shift the burden of proof.

⁸ Olson (2010) would wholly disagree. For Olson, what matters in survival is not relative to being a certain kind of thing at all.

4.1 Persons and Cartesian Dogmas

To understand why relying on a Cartesian concept of personhood is mistaken, we need only examine the case of a brain in a vat and ask ourselves whether a brain in a vat is a person, being careful not to confuse having some moral rights with having the moral rights of a person. I don't think that a brain in a vat is a person, even if a fully cognitive being. I suspect many would agree.

Now, arguably, the brain in a vat scenario is analogous to the experience machine. In both cases, the psychological subjects involved are wholly deluded about their own experiences and their actual place within their external environments. That is, the epistemic status of both subjects in these scenarios is such that neither of them can achieve the state of having knowledge, at least a large swath of what counts as knowledge. And this is an actual criterion we use for judging whether someone has remained the same person over time. Consider, for instance, the seriously deluded individual, or the Alzheimer's patient. At some point, in the loss of their memories, and changes in their characters, we begin to doubt whether they are the same person at all. This is not, however, because a wholly and fully formed new person has come to occupy their place. Rather, it is because of their diminished capacity to be full persons altogether. This shows that seriously compromised knowers are commonly understood as less than full persons, and that therefore the fully compromised knower should not count as a person at all.⁹ It follows, then, that the being in the experience machine will not count as a person, and if personhood

⁹ Other considerations involve whether and how persons are constituted by being agents. Some believe that agency is essential for being a person (Korsgaard, 1989), while others believe that being an agent is different from being a person (Strawson, 1997; Wilson, 2005). I cannot resolve that dispute here.

matters in survival, they also will not satisfy the condition(s) for having what matters in survival either.

4.2 Standard Psychological Continuity Theory and Personhood

I now suggest that the cause of the standard theory's inability to accommodate a negative reaction to cases like Nozick's is that, while its proponents have thoroughly jettisoned the concept of a Cartesian Ego as the locus of personal identity, they have not eliminated all remnants of Cartesian theories of persons. The theory still, for instance, retains the Cartesian idea of persons as fundamentally environmentally independent cognitive beings. This is where the theory goes wrong.

In order to fully assess the issue, however, the commitments, tacit or otherwise, concerning what standard psychological continuity theory holds not only of diachronic identity, but also what holds of it concerning the nature of being a person.¹⁰ A claim that any psychological continuity theorist seems minimally committed to is that necessarily, persons are a certain kind of psychological entity.¹¹ And, on the standard theory, psychological entities are individuated purely in terms of the internal relations among the psychological states, and not in terms of anything extrinsic to those states. Clearly, in entering the experience machine, that being fully remains a psychological subject in this sense, and therefore, that being maintains what is necessary for their status as a person. Thus far, this

¹⁰ When speaking of a person as not persisting over time, but rather at a time, one idea is that a person is the subject of psychological states or experiences that have a deep unity not shared between separate persons. Some, however, such as Hume (2000), Parfit (1984), Strawson (1997), and Unger (1990), have pointed out that psychological experience alone is insufficient to sustain the 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 neuroscientific literature has coined an expression for it: The Binding Problem.

¹¹ 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.

is a claim only about the necessary condition(s) for personhood on the standard psychological continuity view. But, we can, nevertheless, reasonably infer that the subject in the experience machine would also meet this view's sufficient condition(s) for being a person as well. The reason is that the subject in the experience machine is perfectly psychologically continuous with the 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 there is nothing missing with respect to the psychological properties of the subject prior to entering the machine as compared to the experience machine subject. For this reason, according to the standard psychological continuity theory, it is reasonable to conclude that the subject in the machine would meet the sufficient condition(s) for being a person too, insofar as the prior subject did. The being in the experience machine, then, on standard psychological continuity theory does, in fact, count as a person, contrary to the reaction of horror discussed before.

4.3 Why Being a Person Matters

To illustrate the importance of personhood for having what matters in survival, imagine that you are faced with a terminal illness, and the doctors offer you a choice between two scenarios. In the first scenario, your identity is maintained. In the second, it is not. And, in both, psychological continuity is present, and therefore in both scenarios, each being counts as a person.

In the first scenario, the doctors can save you only by removing your brain, placing it into a vat of brain sustaining liquid, and implanting it with a chip that allows you to

telepathically project your thoughts onto a screen that others can read and respond to. However, the chip's encoded vocabulary is very limited, and so most of your complex thoughts will go unexpressed. For many, this would not be an instance of having what matters in survival, despite the fact that identity seems to be maintained.

Now consider a second scenario. In this scenario, the doctors can save you but only by first storing your psychological states on a chip requiring them to reformat your psychological states into a digital format, and then destroying your own brain and body. The doctors then create a new body just like yours from rapid-growth stem cells, and your psychological states are formatted for the new brain, and then transplanted in the new body's brain. So far as you're concerned, the only discernible difference between before and after the procedure is that you now have a healthy brain and body.

Now which scenario do you choose? I would bet that most would choose the second option over the first one despite the first one being a case that preserves identity, and the second case threatens it. This illustrates that even our desire to persist will always trump other scenarios in which we have what matters, and have it in a particular way. Furthermore, not only is having what matters in survival, in this case, preferable to actual persistence, it is also preferable to having mere psychological continuity, which supports the claim that standard psychological continuity theory cannot accommodate the importance of personhood for what matters in survival.

In fact, this idea is already encoded in our own current practices. We already know, for instance, that people create advanced directives specifying under what conditions they no longer want to be resuscitated. Typically, this has to do with their ability to be fully functional persons. Persons will, and do, choose death, then, over failing to maintain their

personhood illustrating that identity, or even psychological continuity, is enough to maintain what matters in survival. I'll now turn to offering a theory that accommodates the idea that being a person matters in survival.

5. The Life Trajectory Theory of What Matters in Survival

The Cartesian picture, and the attendant standard psychological continuity theory, fail to recognize that a person is the kind of being that not only thinks, but also lives a life, and a living a life is a much broader endeavor than merely having a series of connected psychological states. While I agree that persistent people are at least this, I also believe that persons live lives, and that doing so, is part of what it is to be a person. Living a life creates what I call a subject's "life trajectory," which is the continuous path of an informed psychological subject of experience through an external context. Living a life, or having a life trajectory, involves the having of certain external relations to the environment. The experience machine, as well as the brain in a vat scenario, both threaten something that matters in survival — being a person — because they both prevent subjects from the continued living of their lives — an aspect of a person's ordinary existence.

On the life trajectory view, persons are subjects that forge paths through an external context, and this forging of a path enables subjects to have the additional properties we think of persons as having: such as moral, rational, and epistemic agency; as having some kind of unity of consciousness; as having intentional psychological states; and so on.¹² The life trajectory theory thus incorporates the idea that persons are fundamentally tied to an

¹² Note that this is not a rejection of psychological continuity theory, but instead, an extension of it in an externalist direction.

external environment, a fact that, as we saw, can be illustrated by completely removing them from such contexts.¹³

But what exactly does it take to continue a life trajectory? Because they are in part individuated in virtue of a subject's interactive relations to their environment, which in turn, confer upon them certain extrinsic properties, I claim that life trajectories are maintained, in part, by the continued having of at least some of these extrinsic properties. In developing this idea, I will explain three features of the life trajectory theory: (1) the nature of the extrinsic properties that a subject living a life has; (2) which of these extrinsic properties matter in survival; and (3) what continuity consists in with respect to these extrinsic properties. The first two questions are answered rather simply, the answer to the third question, however, is rather complex.

5.1 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. 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. Another example might be that I own three Catahoulas, or that I live at a certain address, that I am the sole author of this paper, and so on. All of these facts individuate my life trajectory. Of course, similar facts individuate every other person's life trajectory.

¹³ This idea is put forward in McDowell (1997) although for different reasons and to support a different anti-reductionist hypothesis.

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.

The concept of permanent extrinsic properties, since they may not be grasped as intuitively as the others requires some explanation. These are properties that originate 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. 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.¹⁴

5.2 Survival-mattering Extrinsic Properties

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 has to be the permanent extrinsic properties. It cannot be the temporary or long-standing extrinsic properties, since these are properties that come and go, that begin to hold and cease to hold of a subject, all the time. Therefore, acquiring or losing these properties cannot threaten what matters in a subject's survival. The only properties that hold throughout the

¹⁴ But how then does the experience machine threaten these kinds of properties, if we have them even if the relata no longer exist? The answer is because, as mentioned, it is a methodological constraint on any theory of what matters in survival that the subjects in question are, in fact, persons.

life of a subject are permanent extrinsic properties.¹⁵ It must therefore be the continuity of these properties, if any, that figure in an account of what matters in survival. After all, these are lost only upon the cessation of a 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 is part of what allows them to have a sense of continuity over time — that allow an earlier subject to identify with a later one, and a later one with an earlier one — thereby satisfying the earlier offered definition of what it is to have what matters in survival.

5.3 Continuity and Extrinsic Properties

I now turn to the third question. An answer to this question must address a certain worry that 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 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

¹⁵ 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.

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 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 only 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 it 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, while not based on facts actually

experienced by a later subject strictly identical to the earlier subject, they are qualitatively indistinguishable from having genuine memories.¹⁶

I claim that the life trajectory theory, just like the memory theory, can likewise be 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 under what circumstances does a future subject possess the q-properties corresponding to an earlier subject's permanent extrinsic properties? The idea of having the q-counterparts of another's permanent extrinsic properties, I claim, requires satisfying two conditions.

Continuity in Extrinsic Q-Properties

(1) A future subject B has the q-properties corresponding to an earlier subject A's permanent extrinsic properties just in case B relates to their external context in a way qualitatively indistinguishable from the way in which A did up until the time of their cessation.

(2) A future subject B has the q-properties corresponding to an earlier subject A's permanent extrinsic properties just in case B relates to their external context in a way qualitatively indistinguishable from the way in which A would have done after moment t.

¹⁶ 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.

Now that I have specified the conditions for having extrinsic q-properties, the next step is to give a more precise explanation of the nature of these conditions.

Suppose that a subject A ceases to exist at moment t , and another subject B, psychologically continuous with A in the standard sense, comes into existence at t . Now, in order to illustrate how conditions (1) and (2) apply, consider a specific permanent extrinsic property. Suppose that at moment t , A has the property of being the author of a certain paper.

In order for B to satisfy condition (1) concerning the previous property — to be indistinguishable from A with respect to having had that property — several things would have to be true of B. For example, B would have to believe they were the author of the paper, remember having authored it to the extent that A did, have the same attitudes towards the paper that A had, take the same actions with respect to the paper that A did, play the same role in the environment as A did, and so on. In order for all of these facts to be true of B, B must at least be psychologically continuous with A. However, since B could be a brain in a vat and still be psychologically continuous with A, clearly psychological continuity is not sufficient to guarantee that B is A's continuer, since in that case, B would not be able to relate to their environment in the very same way as A did. What must also be true of B then is that if A had never existed, and B had instead, B would have occupied A's previous environmental niche. Assuming these facts hold of B, then they would satisfy condition (1). Likewise for each of A's past extrinsic properties.

Concerning condition (2), if B is A's successor with respect to our sample property, then, if A would have been an author had they continued, so too would B have to be an author after A's cessation. Notice that with respect to this condition, the way in which B is

indistinguishable from A is somewhat different from the way in which B must be indistinguishable from A with respect to condition (1). This is because, up until moment t, there were definite ways in which A had the extrinsic property of being an author. However, we have no knowledge of, or perhaps any way to even determine, the ways in which A would have had that property after moment t. All that we know is that A would have continued to have had that property, given that it was one of A's permanent extrinsic properties, and that they would never have lost it. For this reason, to satisfy condition (2), B needs only to continue having the q-counterpart of being the permanent author of a certain paper. That is, B's having the q-counterpart of A's property of being an author, must always remain a permanent property of B's. It can never be lost.

We have now seen what must be true in order for B to satisfy conditions (1) and (2) with respect to a particular extrinsic property, but we might also wonder about the global requirements involved in their satisfaction. For instance, must B have all, or only most, of A's extrinsic properties? With respect to condition (1), the answer is relatively clear. Insofar as it must be true that B would have occupied A's environmental niche in a way qualitatively indistinguishable from the way A actually did, this would guarantee that B must have all of the q-counterparts of A's previous extrinsic properties. The answer is not so clear, however, with respect to condition (2). On the face of it, had A survived, there are all kinds of different permanent extrinsic properties that they could have gained after moment t. However, these possibilities are irrelevant to whether B can continue A's life trajectory in the way that A would have, if they had survived, since it is only the permanent extrinsic properties that A has at moment t that we can say A would have had, if A had survived. The properties A

could have had do not come into play.¹⁷ Candidate B needs only to have those properties that A would have had, not that A could have had. Once again, however, with respect to these properties, for B to be qualitatively indistinguishable from A, B would have to have all of those permanent extrinsic properties that A would have had. As worded, the theory is quite strong in its requirements, but it need not be. I could make the same points if I replaced the notion of qualitative indistinguishability with the notion of significant discernible differences.

I have argued that being a person is required for having what matters in survival, that at least part of this involves living a life, and that continuing to live a particular life is tied up with the continuation of a subject's extrinsic properties. I then offered an identity neutral account of how this might be accomplished. The fact that the life trajectory view makes personhood matter, recommends it over standard psychological continuity theory. The fact that it can appeal to both those who believe identity matters in survival, and those who do not, also makes it appealing, though no more appealing than the standard view as there are ways that it too can be made to accommodate identity as mattering in survival.

6. Two Positive Consequences of the Life Trajectory Theory

What I will now do is point out two further positive features of the view that the standard theory lacks. The first concerns the fission scenario, which will take some time to explain why it is a positive consequence, and just how the theory entails it. The second positive consequence involves cases of virtual immersion.

6.1 Fission and the Singularity Requirement

¹⁷ For an extended treatment of these conditions relying on and spelling out the modal notions in more detail, see Appendix A.

The first positive consequence of the life trajectory theory is that, despite its being an identity neutral theory, it nevertheless entails rejecting at least one of the considerations in favor of the claim that identity is not what matters in survival — the fission consideration. While this is obviously a happy consequence for identity theorists, it is also one even for non-identity theorists who have had doubts about the claim we have what matters in survival in fission cases.¹⁸ After all, not even Parfit himself offered the fission consideration as having intuitive value. It was simply a consequence of standard psychological continuity theory. But, as it nicely turns out, what matters in survival, according to life trajectory theory, admits only of one-to-one relations between earlier persons and their successors, even if those relations are not identity preserving — a singularity requirement. Call any psychological continuity theorist who accepts the singularity requirement — who finds the fission consequence undesirable — and yet who also rejects an identity theory of what matters in survival a “Parfitian singularist.”

You might wonder why someone would wish to reject fission cases if they are willing to reject identity as what matters. That is, if identity is not what matters, why not accept that multitudinous forms of continuation are perfectly acceptable? Or, in the other direction, if multitudinous forms of continuation are not acceptable, why not just be an identity theorist? Well, to answer the last question, is that the argument that identity is not what matters in survival is not supported by only the fission considerations, as we’ve already seen. There are several reasons a Parfitian singularist might have for rejecting that identity matters that

¹⁸ See Korsgaard, 2003; Schetchman, 1996; Sosa, 1990; Rovane, 1998; Unger, 1997; Whiting, 2002; Wolf, 1986; among others. Other psychological continuity theorists, however, embraced the apparent fission consequence — that fission products maintain what matters in survival. Lewis (1983), for instance, agreed that we have what matters in fission cases, as do some others (Moyer, 2008; Ehling, 1995).

have nothing to do with fission, two of which have been already mentioned — Parfit's argument from degree, and Butler's argument from uninformativeness.¹⁹

Answering the first question is going to take a bit more work. I'll start by noting that the question itself is the result of confusing what Belzer (2005) calls the "unity reaction" and the "identity reaction."

The identity reaction is simply the idea that what is required for what matters in survival is identity — an account of the relations between earlier and later persons that respect reflexivity, symmetry, and transitivity. The unity reaction is the idea that having what matters in survival over time requires remaining an integrated unit or whole over time.²⁰ However, we can distinguish between the concept of something's being unit over time from the concept of its being a persistent object over time. Imagine, for instance, a sports team that wins the championship every year, but that every year, the team also changes its membership entirely. In this case, we have a unit that wins the championship every year for which we can cheer, but we do not have some particular persistent object that does the winning every year. There is no group of winners, for instance, that we can congratulate on their successes.

Because unity and identity can come apart, we can believe that one is necessary for having what matters in survival without believing that the other is necessary. And this is exactly what the non-identity theorist could endorse — that unity does matter in survival, even if identity does not. Putting this in terms of psychological continuity theory, only a being

¹⁹ Other reasons might involve relying the notion of q-memories to argue against the rationality of caring about something that makes no qualitative difference to an experiencer, or they might involve arguments against treating the project of theorizing of about the nature of persons as on a par with theorizing about the nature of natural kinds generally.

²⁰ See also Perry (1972) for discussion of this distinction.

that can be considered a psychological unit over time can have what matters in survival. Now why should believe this? Well, let me return to the original worry about maintaining our personhood, which I claimed required maintaining our life trajectories. If this is correct, if having a life trajectory really is required for being a person, and we care about this, and further, that maintaining them requires satisfying the two conditions claimed it does, the unity reaction simply follows from the life trajectory theory.

6.2 Why The Life Trajectory Theory Rules Out Fission Scenarios

To see why the life trajectory theory rules out fission scenarios, imagine once again that 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, does the life trajectory theory allow for the possibility that both B1 and B2 to have what matters in A's survival? Well, they could if, in addition to maintaining psychological continuity, both B1 and B2 can continue A's life trajectory — that both B1 and B2 possess the q -properties corresponding to the permanent extrinsic properties of the subject A, such as being the author of a certain paper.²¹ But can fission products have the q -property of having authored that paper? I will argue that the answer is “no.”

²¹ Parfit argued that non-branching psychological continuity cannot be what matters in survival, because this is a matter of the intrinsic relations 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. Does this very same reasoning apply to the life trajectory theory? The short answer is “no.” On my view, it does not directly matter whether there are one or two persons who have the same intrinsic relations to an earlier subject, since conditions (1) and (2) ensure that more than intrinsic properties matter in survival.

Regarding condition (1) of the definition, if B1 and B2 could satisfy it, it must be possible for both B1 and B2 at moment t, each psychological duplicates of A, to be the author of the relevant paper. However, this is not possible given that only one person at a time can relate to the world as the author of a certain paper. We could try ascribing B1 and B2 have some kind of authorial status, however, perhaps that of having co-authored the paper in question. 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 the 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 character from, say, being the co-author of a paper.²² If you are a co-author of a paper, for example, you would not believe that you are the author of the paper, you would recall having authored only parts of it, and you would not identify with that paper as only your own, and so on. Fission products, therefore, cannot satisfy condition (1) for 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.²³ As we saw, one of the properties that A would have had after moment t is being the author of a certain paper. Now in order for B1 and B2 to have this property, they must be able to be said to currently have that permanent property. As before, however, by definition, having the

²² This would be true even on a weaker version of the theory as well.

²³ One potential objection to this criterion is that it begs the question. The issue can be understood in the following 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.

property of being the author of a certain paper is not something that two people can have at once. 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 any successor of an earlier person must sustain that property in its permanent and therefore present tense form.

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 both conditions (1) and (2) for the continuity of the q-properties of a life trajectory, and therefore fission fails to maintain what matters in the survival of persons over time.

The life trajectory theory is therefore more plausible than standard psychological continuity theory since it is consistent with identity neutral theories of persons. Furthermore, it need not accept that on the grounds for a rather unintuitive reason — that psychological states can be duplicated.

6.3 Virtual Immersion Scenarios

The second positive consequence for the life trajectory theory is that it can explain and predict a range of intuitions about these cases. I will reconsider the experience machine and a variant on that case.

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 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.²⁴

I'll now compare the two cases with respect to the apparent predictions of our reactions to them, 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

²⁴ 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.

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 it turns out, life trajectory theorist can, in fact, predict the correct reactions to the second virtual immersion case. To see this, we need only to re-conceptualize 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 therefore more plausible than standard psychological continuity theory. This is because it can predict both of our reactions of horror and of anticipation to different cases of virtual immersion.

7. 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.

7.1 Fission Scenario Variants

Thus far, fission has been rejected as a way of surviving 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 the fission product, whose psychological states have been updated via chip implants to maintain psychological continuity with the original subject, 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, this conclusion is questionable. It is not clear, for instance, whether this is truly a case of fission or simply one of sophisticated body cloning together with a kind of mental state transfer process. The claim that fission rejuvenation counts as a true case of fission would need to be established before we could draw any conclusions about the life trajectory theory.²⁵

²⁵ See Martin (1995) for reasons for thinking it truly is a case of fission.

7.2 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 the interpretation of the claim that what matters in survival is having certain q-properties. Although I do earlier offer a brief reason for thinking that such properties do intuitively matter, I do not offer much in the way of a defense of this claim. But this is not significant. The claim that what matters in survival is the continuation of some extrinsic q-properties is not supported on the grounds of our intuitions, just like the belief that fission maintains what matters is also not so supported.

On the life trajectory theory, the fact 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 do not have what matters in the experience machine case, given that 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, then, is an implication of caring about being connected to the external environment, and remaining a person. Caring about extrinsic properties is therefore not the life trajectory theory's starting point, again, just as caring about fission products is also not a starting point, but rather an implication of caring about psychological continuity. In other words, the closure principle for the intuitiveness-operator, such as there is, is false. Simply because a claim is intuitive, and some other claim follows, does not mean that the second claim must likewise be intuitive.

8. 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 also argued that the theory fares better with respect to our intuitions about certain cases, such as fission and different kinds of virtual immersion scenarios.²⁶ 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. What matters in survival is more than the internal relations that hold between earlier and later subjects, external relations matter too. And at least one theory — the life trajectory theory — can accommodate this fact.²⁷

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²⁶ 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 way I combine these theses is novel. 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, rather than all external relations.

²⁷ Thanks to John G. Bennett, Peter Carruthers, Ted Everett, Dan Giberman, John Harty, Peter Ludlow, Duncan MacIntosh, Raymond Martin, Eric Olson, John Perry, Paul Pietroski, Georges Rey, and Allen Stairs for comments on drafts in progress. Thanks also to Derek Parfit for sharing his work in progress on the topic. More thanks are due also to various anonymous reviewers, audiences at the 2010 "Personal Identity, their Embodiments and Environments" Workshop, the 2004 Canadian Philosophical Association meeting, the Dalhousie Philosophy Colloquium Series, and the UC Riverside Workshop Series.

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