

Memory, Organisms and the Circle of Life¹ (draft)

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Introduction

Suppose an evil scientist, Mona, captures Moe and transposes all of Moe's mental life into another human organism, Doe. The human organism (previously) associated with Moe, remains intact and alive. At some point, Mona decides to use the body for other purposes, and suffocates it until all its vital functions cease and rigor mortis sets in. Mona thinks that she didn't kill Moe because he persists as Doe, given that his entire mental life has been transposed to Doe. Therefore, whereas the remaining human animal that was associated with Moe ceases to live, Moe continues to exist.²

Mona is a psychological-continuity theorist of personal identity.³ According to psychological-continuity theories, we are essentially psychological beings and have psychological persistence conditions. According to one such theory, the memory view, our persistence conditions are given in terms of memory.

By contrast, some theorists, namely animalists, would argue that Moe persists as the human animal, and not as Doe; we are necessarily human animals, and not psychological beings.⁴ Accordingly, animalists think that Moe persists as long as the human animal (with which he is identical) persists. However, while animalists agree that Moe *just is* the human animal, and that he persists as long as it persists, they disagree about whether he (i.e. the human animal) ceases to exist at death or can persist through death as a corpse. There are two main factions within the animalist camp, which provide two distinct answers to the question of when we – human animals – cease to exist. According to the organic animalist camp human animals persist so long as they are alive; necessarily, we are *living* human animals. According to the somatic animalist camp we are identical to human animals, but these human animals might persist through death as corpses (I am borrowing the terminology “organic animalism” and “somatic animalism” from Blatti, 2014).

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² I will use “human animal” and “human organism” interchangeably.

³ Psychological theories of personal identity have been defended by, among others, Locke (1694), Shoemaker (1970), Parfit (1984), and Noonan (1998).

⁴ Animalism has been defended by van Inwagen (1990), Olson (1997), Mackie, 1999a, b.

In this paper, I will argue that organic animalists cannot specify the persistence conditions of human animals in a non-circular way. The structure of the paper will be as follows. In section 1 I will discuss organic animalism and raise a circularity problem for it. In section 2 I will discuss an analogous worry affecting the memory view. Then I will argue that existing solutions for the circularity worry about the memory view (section 3) cannot be transposed to help organic animalists with the circularity problem affecting their persistence criterion (section 4). I will then ask whether we can solve the circularity problem in some other way, by starting with the question of what kind of a thing, and specifically what kind of an event, a life is. I will argue that on any plausible construal of events, we land in one version or other of the circularity problem. I will conclude that the organic animalist's usual way of understanding organism persistence is hopelessly circular.

1. Organic Animalism and the Persistence of Human Animals

Organic animalists argue that organisms cease to exist when they die.⁵ It then seems natural to try to analyze their persistence in terms of lives. I will first describe a way some animalists specify the persistence conditions of organisms in terms of lives. For such a persistence criterion to be informative, we need to know something about the conditions under which a life can persist over time. Therefore, I will briefly characterize what organic animalists mean by the term 'life', and how a life persists over time.

According to van Inwagen, objects whose activity constitutes a life thereby compose an organism that has that life.⁶ For this reason, van Inwagen endorses the following principle for organism persistence over time:⁷

Life Principle: If the activity of the x s at t_1 constitutes or results from a life, and the activity the y s at t_2 constitutes or results from a life, then the organism the x s compose at t_1 is the organism the y s compose at t_2 if and only if the life that the activity of the x s at t_1 constitutes

⁵ This position has been defended by Olson (1997) and van Inwagen (1990). Other animalists are not committed to the thesis. For example, Snowdon (1995) seems to be neutral with respect to this issue. Other animalists, e.g. Feldman (1992), Mackie (1999b), Ayers (1991) and Carter (1989, 1999), argue that animals persist as corpses.

⁶ Both van Inwagen and Olson use "organism" and "animal" interchangeably, and so will I.

⁷ This is a Lockean view, on which sameness of life is a criterion for organism persistence.

or results from is the life that the activity of the y s at t_2 constitutes or results from. (van Inwagen 1990, 148-149)⁸

According to this principle the persistence of a life is necessary and sufficient for the persistence of an organism.

Similarly, Olson argues that it is possible to give necessary and sufficient conditions for the persistence of an organism in terms of the persistence of a life: according to Olson “for any organism x and any y , $x=y$ iff x ’s life is y ’s life” (Olson 1997, 138). We can put this criterion in the following terms that bring out the fact that this is meant to be an account of organism (animal) identity over time:

Life Criterion: life $L1$ at t_1 is identical to life $L2$ at $t_2 \equiv$ Animal $A1$ animated by $L1$ at t_1 is identical to Animal $A2$ animated by $L2$ at t_2 .

This persistence criterion seems plausible, especially if you’re an organic animalist. For in that case, one can also give neat persistence conditions for *us*.

However, by itself the criterion is not yet informative. We need to know more about when a life persists in order to know when the left-hand side of the biconditional specified in *Life Criterion* is true. One particularly influential characterization of life is due to Peter van Inwagen; a similar view has subsequently been defended by Eric Olson (in what follows, I will mostly focus on the original van Inwagenian version). I will show that while van Inwagen’s characterization of a life may be informative when it comes to the individuation of a life at a time, it falls short of specifying the persistence conditions of lives.

A life is a self-maintaining event that is self-directing and reasonably well-individuated.⁹ Van Inwagen claims that it is often pretty clear whether a life observed at a time is the same life as a life observed at another time (or place) (van Inwagen 1990, 87). For example, since a life is a self-directing event, we can reasonably reidentify it over time as follows. If a life is presently constituted by the activities of the x s and was constituted by the activities of the y s ten years ago, it seems natural to identify the life presently constituted by the x s with a life constituted by the y s if the life

⁸ The principle is supposed to also cover cases in which the organism may be frozen, but not dead. To include this as a genuine case of a life van Inwagen includes the notion of “resulting from a life”.

⁹ Presumably, it is only reasonably well-individuated because van Inwagen holds that composition and parthood are a matter of degree.

constituted by the *x*s propagated itself along a continuous path in space-time from the earlier to the present space-time location (van Inwagen 1990, 87). Thus spatio-temporal continuity seems to be at least a *prima facie* sufficient condition for the persistence of a life according to van Inwagen. As we shall see, however, van Inwagen modifies this claim and adds further conditions for the persistence of a life.

For one, van Inwagen thinks that a life is a jealous event: a composite object can only be animated by one life. He examines a case in which one would naturally think that lives overlap. He asks us to imagine that Alice and Beatrice are fused in the following way:

A mad surgeon cuts off Alice's left hand and Beatrice's right hand and joins their stumps together, so that they look rather as if they were part of a chain of paper dolls. The surgeon thus produces what might be described as a case of artificial Siamese twins. It is at least theoretically possible that the anatomy of Alice's wrist be so nearly an exact match to the anatomy of Beatrice's wrist, and the healing of one to the other be so nearly perfect, that no boundary between Alice and Beatrice be discoverable. (van Inwagen 1990, 59)

According to van Inwagen this is not a case of two overlapping lives. Instead, the case only shows that it is possible for the "vague haloes of influence that surround lives to overlap" (van Inwagen 1990, 89).¹⁰ This remark admits of two different interpretations. According to the first, the particles that Alice and Beatrice seem to be sharing belong to neither of them simpliciter, but rather to a degree n , where $0 < n < 1$. Van Inwagen thinks that composition and parthood are vague; it therefore seems plausible to also claim that the overlap relation is vague. So Alice and Beatrice do not overlap, on this interpretation, in the sense that there is no part that belongs to both of them to a degree 1. Another way to make sense of the "vague haloes of influence" remark relies more heavily on the vagueness of parthood: Whenever we have two organisms, A and B, for any x , if A has x to degree n , then B has x at most to degree $1-n$. That is, to the extent that A has x , at least to that extent B doesn't have x .¹¹

¹⁰ Van Inwagen allows for a life to be subordinate to another as a form of overlap. However, the case of Alice and Beatrice is not one in which two lives overlap "without one being subordinate to the other" (van Inwagen 1990, 89). One may also wonder why two lives don't overlap if they share some of their parts (albeit to a degree that is less than 1). For the sake of the argument I assume that this position is unproblematic.

¹¹ I thank David Mark Kovacs for this suggestion.

Jealousy only characterizes a life *at* a time. But van Inwagen also offers a characterization of a life *over* time. This characterization could help us determine when a life L1 is identical to a life L2. Van Inwagen says a few things about what cross-temporal life identity might consist in. As I mentioned earlier, spatio-temporal continuity is a possible sufficient condition for the persistence of a life. He further proposes that temporal continuity is a necessary condition for the persistence of a life: if a life is going on at t_1 and t_3 , then for any time t_2 between t_1 and t_3 there must be objects whose activity at t_2 constitutes or results from the life at t_1 (1990, 149). This criterion – *spatiotemporal and material continuity* – seems *prima facie* plausible as a necessary and sufficient condition. In many cases applying the criterion would give us the right results. However, van Inwagen admits that there are cases that can be taken to be counterexamples to this account. Cell division and embryonic growth raise the question of when we actually have a case of continuity (van Inwagen 1990, 149). Furthermore, metamorphosis (particularly in invertebrates) suggests that two numerically distinct lives may be continuous with each other despite displaying the required kind of continuity (van Inwagen 1990, 150)¹². He also thinks that in certain rare cases, the criterion could lead us astray. For instance, he claims that according to the principle, two Siamese twins who are superficially conjoined compose a single organism (1990, 156).¹³ Thus van Inwagen admits that although the continuity criterion will not lead us astray in most cases, in some cases it might (van Inwagen 1990, 155-156). For this reason, we should not conclude that the continuity criterion provides necessary and jointly sufficient conditions for organism persistence.

Much like van Inwagen, Olson does not offer a set of necessary and sufficient conditions for the persistence of a life.¹⁴ I will show that if we take a closer look at what it takes for something to be a life, we can see that organic animalists, in general, *cannot* offer non-circular persistence conditions for organisms. The main problem is that if they want to offer a non-circular criterion, then they need to explain what it takes for a life to persist without making reference to the persistence of owners of that life, i.e. organisms. Van Inwagen admits as much, and thinks that this is a possible task: “Ultimately, I shall have to explain what I mean by ‘life’ without making reference to composite objects like organisms” (1990, 83). Note that although van Inwagen talks about how

¹² Of course, one may argue that the criterion shows the two lives are not distinct.

¹³ It is curious that here, van Inwagen simply argues that this criterion leads us astray, whereas elsewhere (1990, 89) he argues that Siamese twins do not share a life.

¹⁴ Olson argued, at some point, that this could be done by appealing to the persistence of the brainstem. But he has abandoned this view (see Olson 2016).

he can explain 'life' without reference to organisms, given his interest in persistence this also means that he would need to explain life *persistence* without reference to organism *persistence*. The problem I will discuss will be not that the concept of a life presupposes the concept of an organism, but that the relation of *having the same life as* is an identity-presupposing relation.

2. The Circularity Objection

To briefly recap, a life is normally taken to be a jealous process or event, which involves a certain object – an organism. Recall that organic animalists offered the following persistence criterion:

Life Criterion: life L1 at t_1 is identical to life L2 at $t_2 \equiv$ Animal A1 animated by L1 at t_1 is identical to Animal A2 animated by L2 at t_2 .

The criterion seems natural, especially if we think that an organism is necessarily alive. However, I will show that if we want to specify the persistence conditions of human animals in terms of lives, then a problem arises. Namely, the identity of a life over time conceptually presupposes organism identity. More specifically, y having the same life as x presupposes x being identical to y . As we will later see, the problem is analogous to a familiar objection to the memory view of personal identity.

Why think that *Life Criterion* is circular? Focus on identity criteria of the form “ x of kind F at $t_1 = y$ of kind F at t_2 iff w of kind G at $t_1 = z$ of kind G at t_2 ”. These identity criteria specify the persistence conditions of some kind of thing in terms of the persistence conditions of *another* kind of thing. For persistence criteria of this form to be non-circular, we need to have a grasp of the identity conditions of the relevant Gs that doesn't depend on our grasp of the identity conditions of the Fs. For example, the persistence conditions of mereological sums is easily given in terms of the identity of their particles: sum S1 at $t_1 =$ sum S2 at t_2 iff the x s that compose S1 at $t_1 =$ the y s that compose S2 at t_2 . This is unproblematic, since in order to grasp the identity conditions of the composing particles we don't need to make any assumption about the objects they compose. I want to suggest that things are different with organisms and their lives: we cannot grasp the persistence conditions of a life without already having grasped the persistence conditions of the organism they belong to. Yet this would be necessary to avoid circularity: it should be possible to entertain the thought that L_1 at $t_1 = L_2$ at t_2 without presupposing the identity of the owners of L_1 and L_2 . This implies that in

order to know whether L1 at t_1 and L2 at t_2 belong to the same organism, it should be possible to independently individuate and reidentify a life over time. However, it seems that ‘L1 at t_1 = L2 at t_2 ’ is elliptical for ‘some organism animated by L1 at t_1 = some organism animated by L2 at t_2 ’. On the (highly plausible) assumption that a life can only animate one organism at a time, this implies that life persistence presupposes organism persistence.

Why accept this claim? If life identity doesn’t presuppose organism identity, we have no means of ruling out at least one of the following two scenarios as genuine *conceptual* possibilities: (i) a life L1 of animal A1 can persist as the life L1 of animal A2, even though $A1 \neq A2$; or (ii) life L1 of A1 can persist as life L2 at t_2 , although L2 does not belong to any organism at t_2 . If (i) is conceptually possible, then the identity of a life over time is not a relation that presupposes organism identity, because we can conceive of a single life belonging to distinct organisms. If (ii) is conceptually possible, then the identity of a life over time is not a relation that presupposes organism identity because it is (at least conceptually) possible for a life to not belong to any organism at all. However, we have good reasons to think that neither (i) nor (ii) represents a conceptual possibility.

First, we can rule out (ii) because – independently of persistence questions – a life always belongs to something or other. It seems conceptually impossible for a life to exist ‘free floating’, without an owner. So (i) seems like a better bet for developing a non-circular persistence criterion for organic animalism. In this case, it would be possible for a life L1 at t_1 to be identical to a life L2 at t_2 without their owners being identical. But again, one might worry about the feasibility of this criterion. It seems that if (i) is possible, then the persistence of a life would not, after all, be necessary and sufficient for the persistence of the to which it belongs animals.

At this point, the organic animalist could argue that this objection is based on a conflation between conceptual and metaphysical possibility. While it is metaphysically impossible for a life to belong to two different animals at different times (there is no possible world in which a L1 belongs to different owners at different times), it is *conceptually* possible. And if it’s conceptually possible, then life identity doesn’t conceptually presuppose organism identity. Thus, the life criterion is non-circular and at the same time extensionally adequate.

While I generally recognize the distinction between metaphysical and conceptual possibility, it’s unclear how the distinction can be put to use in the present case. To see why, consider the following “standard” case. Although it is conceptually possible that water is not H₂O, it is metaphysically impossible. Why? Gertler (2002) offers the following, to my mind plausible, account. Our evidence for an identity statement depends on the ability to “*recognize*” the kinds of conditions

which secure reference...[to be] generally disposed...to make appropriate judgments about referential relations in counterfactual situations” (2002 30). But now consider the organism/life case again. ‘Organism’ and ‘life’ are plausibly both natural kind terms, and our use of these terms plausibly involves a fair amount of deference to experts. For example, it seems that we are deferential regarding the reducibility of life to chemical processes, or with respect to the possibility of silicon-based life. However, our deference doesn’t extend to the *relation between organisms and life*: it’s hard to see what new discoveries in biology could possibly sever the conceptual link we posit between there being a life and that life belonging to an organism (and the same organism throughout). Compare: we may be deferential regarding the chemical structure of water, but the conditional, “if water is H₂O, then H₂O consists of H and O molecules”, doesn’t depend on deference to experts.

To have a certain concept of water and for any identity statement about water (e.g. that it is H₂O or that it is XYZ) one needs to already be able to know whether *that* thing satisfies certain conditions for being water. But the disposition to make such judgments depends on one’s deference to external authority about the essence of a kind. Gertler understands “authority” in a broad sense, to include trust in individual humans as well as scientific communities (2002, 31). At any rate, our unwillingness to deny that water could (metaphysically) be XYZ reflects this kind of deference. In short: the gap between conceptual and metaphysical necessity is explained by the fact that the application conditions of the relevant concepts are in part specified by external authority we are deferential to, but that we don’t know all the factors that go into the judgment passed by the relevant authority.

Unlike the case of water, the judgment that it is impossible for a life to belong to two owners at different times does not rely on deference of the kind that Gertler discusses; the claim is not secured by relying on empirical facts or expert opinions. Generally, it is hard to see how one can empirically determine whether L₁ at t₁ = L₂ at t₂. Being able to determine this already presupposes a conception of which changes a life can undergo, and that is not something we would think experts can empirically determine. We should distinguish between two question here. The first does not rely on the kind of deference that Gertler discusses, while the second one might. The first question is: “under what conditions, in general, can we make sense of the claim that life L at t identical to a life L* at t*?” This question is of a general nature and a general answer seems to be that it only makes sense when L belongs to an organism O and L* belongs to an organism O* and O=O*, whatever that organism might be. The second question is more specific: “when is L₁ at t₁ identical to L₂ at t₂

given that L1 belongs to organism O?” The latter question might require at least some expert knowledge. To see why, consider trying to track a single life process over time. Suppose that there’s a life process L1 at t1 when a caterpillar eats; it continues at t2 when the caterpillar builds a cocoon. At t3 the life process is exhibited by the pupation stage, and at t4 the life belongs to a butterfly. In order to be able to say that L1 continues through t4 it seems that we must already assume a certain connection between L1 at the organism that has that life. For example, if at the end of the process a tiny dog emerges from the chrysalis, then we would be inclined to say the life exhibited by that organism is new. This judgment depends on the empirical/scientific knowledge that normally caterpillars have a certain life cycle that is unlike the life cycle of dogs. Note, however, that the first question does not require any such expert knowledge.

So, the distinction between metaphysical and conceptual possibility doesn’t help in the present case: our judgment that it’s metaphysically impossible for L1 at t1 to be identical to L2 at t2 unless the organism animated by L1 at t1 = the organism animated by L2 at t2 doesn’t depend on expert knowledge whose details are opaque to us. For this reason, we cannot drive a wedge between metaphysical and conceptual impossibility in this *particular case*. It’s metaphysically impossible for a life to belong to different owners at different times because given our concepts of organism and life, a life has only one owner throughout its entire duration.

Now, the previous argument depended on the idea that lives cannot be individuated without reference to their owners. But perhaps there is a way to bracket reference to owners of lives when we specify the persistence conditions of lives. That is, although lives necessarily belong to owners, perhaps we can still specify their persistence conditions without mentioning their owners).

It might seem possible to devise such a criterion by appealing to van Inwagen’s characterization of life as a self-propagating event. Such a criterion would be in the spirit of (i) because it would not mention the owner of a life and would presumably be neutral on the question of organism identity. It would provide us with a way to “track” a life over time, without first presupposing that the owner of that life is the same over time. According to this approach, we can know that L1 at $t_1 = L2$ at t_2 by establishing that the events are spatiotemporally connected and that the activity of the *particles* that participated in L1 was self-propagating and self-maintaining. Accordingly, we can understand ‘the persistence of a life L1’ simply as the persistence of the activity of the particles in a certain region. This strategy does not seem to presuppose organisms that the life belongs to, and might therefore think that it avoids the circularity worry. Recall that according to Life Principle “the organism the xs compose at t_1 is the organism the ys compose at t_2 if and only if

the life that the activity of the xs at t_1 constitutes or results from is the life that the activity of the ys at t_2 constitutes or results from” (van Inwagen 1990, 148-149). So all we need to do in order to establish life identity is show that the activity of the ys at t_2 results from the activity of the xs at t_1 . In other words, organic animalists can offer the following criterion of persistence:

Mere-life-continuity: life L1 constituted by the activity of the xs at t_1 = life L2 constituted by the activity of the ys at t_2 iff the activity of the ys at t_2 is causally dependent on, or results from, *in the right kind of way*, the activity of the xs at t_1 .

If this strategy works, then it is possible to account for the persistence of organisms in terms of lives in a non-circular way. For there is a way to account for the persistence of a life that does not conceptually presuppose that its owner is the same at different times.

However, I will argue that *Mere-life-continuity* fails to meet the non-circularity requirement because the expression “in the right kind of way” ultimately presupposes organism identity. To introduce the problem, in the next section I will briefly examine an analogous circularity problem that affects the memory view of personal identity. To do so I will first show that the persistence condition offered by the memory view and that offered by organic animalists are structurally isomorphic. Then I will consider a popular answer on behalf of the memory view and argue that even if it dodges the circularity worry, adherents of *Mere-life-continuity* have no similar move at their disposal.

3. Psychological Views: an Analogous Circularity Problem, a Solution, and another Problem

You may have noticed an analogy between my objection to analyzing organism persistence in terms of life identity and Butler’s famous circularity objection to the memory criterion. In this section, I will briefly introduce the memory criterion and the circularity problem affecting it. I will then show that there is also a structural similarity between the standard solution to the circularity problem and the one I offered on behalf of the organic animalist.

According the original Lockean version of the memory view, in order to account for

personal identity over time we need to appeal to memory.¹⁵ The kind of memory that Locke has in mind is experience-memory (rather than factual memory), and is typically expressed by first-person mode reports such as “I remember F-ing” (Noonan 9). According to the memory criterion, Person P1 at t_1 = person P2 at t_2 iff P2 at t_2 has (some of the) memories of P1 at t_1 or remembers what P1 at t_1 experienced.

One problem with the memory as stated is that the memory relation seems to have the wrong formal properties to account for identity through time. Identity is transitive, while memory is not, so it is unclear how personal identity can be analyzed in terms of memory.¹⁷ This problem has led neo-Lockeans to introduce a distinction between psychological connectedness and psychological continuity. Psychological connectedness requires direct memory connections: to say that person P2 is psychologically connected to person P1 at t_1 is to say that P2 has sufficient memories of experiences had by P1 at t_1 . While connectedness requires transitivity, continuity does not: Person P₁ at t_1 is continuous with person P_n at t_n just in case there is a chain of overlapping memories between them. So continuity does not require that a person remember anything from twenty years ago, as long as there is a chain of overlapping memories between the person now and that person twenty years ago. Thus modified, the memory view offers the following persistence criterion for persons:

Memory criterion: Person P1 at t_1 is identical to person P2 at t_2 iff P2 at t_2 is linked by continuity of experience-memory to P1 at t_1 (see Noonan 10 for this formulation).

There are a few problems with this criterion, too, but only one of them is relevant to my present concerns: the circularity problem.¹⁸ I will focus on the circularity problem and the standard solution offered in the literature.

Butler argued that the memory criterion was circular.¹⁹ According to the objection, memory cannot be a criterion of personal identity, because it presupposes the identity of the person who had the experience and the person who remembers it:

¹⁵ According to Neo-Lockeans, memory is at least partly constitutive of psychological continuity and hence of personal identity. Some contemporary neo-Lockeans have added other kinds of psychological connections to account for personal identity over time (see Slors 2001)

¹⁶ Locke does not use the expression “memory”; instead, he uses “consciousness”. However, his usage of the expression “consciousness” is normally interpreted as memory (see Noonan 42-43).

¹⁷ This objection was first raised by Butler (1736/1975) and Reid (1785/1975)

¹⁸ See Noonan 11-17 for a short overview of the other problems.

¹⁹ This problem has also been discussed more recently by Shoemaker (1970), Penelhum (1970) and Parfit (1984). In what follows I will discuss some of the more recent version of the problem.

“And one should really think it self-evident that consciousness of personal identity presupposes, and therefore cannot constitute, personal identity, and more than knowledge, in any other case, can constitute truth, which it presupposes.” (Butler 100)

The idea behind this objection is that “S remembers doing A” entails “S did A” (and therefore entails “S is identical with the person who did A”): “only because ‘S remembers doing A’ is elliptical for ‘S remembers himself doing A’” (Shoemaker 1970, 281). In other words, memory presupposes personal identity.

To see why ‘S remembers doing A’ is elliptical for ‘S remembers himself doing A’, consider the following example. Suppose I go to the beach and get stung by a jellyfish. This is a painfully vivid experience, so I am likely to remember it. But suppose an evil scientist transplants this memory into your mind. Now you have a painfully vivid image of being stung by a jellyfish. But is it right to call your image a memory? Arguably not. And the reason is that you were not the person actually stung by that jellyfish at that time. Veridical memory presupposes that the remembering person and the experiencing person are identical. Otherwise, it is not memory. So to say that I remember F-ing just is to say that I remember myself (and not someone else) F-ing. Using memory as a criterion or as an analysis of person identity over time is therefore circular.

One of the most popular solutions to this problem has been to introduce a new concept, quasi-memory (q-memory), which is just like memory except it does not presuppose identity (Shoemaker 1970, Penelhum 1970, Parfit 1971, Noonan 1991). For example, according Parfit I q-remember an experience iff:

1. I seem to remember having an experience,
2. someone did have this experience,
3. my apparent memory is causally dependent, in the right kind of way, on that past experience. (Parfit 1984, 220)

Clause (3) can be also put as the requirement that there be an appropriate causal connection between the having of the experience and the experience of remembering it. Shoemaker calls it an M-type causal chain: the kind of causal chain that must link a quasi-memory “with a corresponding past cognitive and sensory state if they are to be ‘of’ the same event, or if the former is to be ‘of’ the latter” (Shoemaker 1970, 278). If there is an appropriate causal link (an M-type causal chain)

between the experience as of remembering F-ing and the experience of F-ing, then the experience of remembering constitutes memory (Shoemaker 1970, 278).²⁰ There are some constraints on M-type causal chains, of course. For example, they should be spatiotemporally continuous, and in general be very similar to the causal chains that result in actual memory (Shoemaker 1970, 277-278).

If this solution works, perhaps we can also find a solution to the circularity of life problem. Since the problems are analogous, it seems plausible to suppose that the solutions may be analogous. In the next section I will examine a possible (analogous) solution for the circularity problem that organic animalists face. I will show, however, that the proposed solution is far less promising than the solution discussed in this section.

4. Does the Solution Work for Organic Animalism?

Recall that according to the solution I provisionally proposed in response to the circularity problem for organic animalists, there might be a way to specify the persistence conditions of lives without appealing to the persistence of the organisms the lives belong to:

Mere-life-continuity: life L1 constituted by the activity of the xs at t_1 = life L2 constituted by the activity of the ys at t_2 iff the activity of the ys at t_2 is causally dependent on, or results from, *in the right kind of way*, the activity of the xs at t_1 .

Thus modified, this approach is analogous to the Shoemaker-Parfit fix on the memory criterion. Recall: that solution introduces quasi-memory as a notion that doesn't presuppose identity. One necessary condition of having a quasi-memory is that "my apparent memory is causally dependent, *in the right kind of way*, on that past experience" (Parfit 1984, 220 my emphasis). According to the analogous solution, life L1 constituted by the activity of the xs at t_1 = life L2 constituted by the activity of the ys at t_2 iff the activity of the ys at t_2 is causally dependent on, or results from, *in the right kind of way*, the activity of the xs at t_1 . If it is possible to account for the persistence of an individual life in this way, then the threat of circularity is removed: we can account for the persistence of organisms in terms of the persistence of lives without presupposing the identity of the organisms.

²⁰ The appropriate causal link in this context involves a non-branching causal chain.

However, if we closely examine what it means for the activity of the *ys* to result from the activity of the *xs* *in the right kind of way*, we will see that the circularity problem reappears. Specifically, I will argue that what counts as the proper kind of causal connection between L1 and L2 is species relative. The species relativity, in turn, depends on the species that the owner of L1 belongs to. Each species comes with associated criteria of identity.²¹ So, to specify the right causal relation for a given L*, we need to presuppose the criteria of identity associated with the species, S, that the owner of L* belongs to. The reason is that we cannot have a full grasp of the concept of a species without grasping the persistence conditions of its members.²² Which is to say, to specify the causal relations between the *xs* and the *ys* whose activity constitutes L1 and L2, respectively, we already need to presuppose the persistence conditions associated with the species that L1 and L2 belong to.

I will show that there is no way to specify the persistence conditions of lives without mentioning the persistence conditions of individual organisms. Specifically, there is no way to non-circularly fill out the right hand side of the following biconditional:

Life L1 instantiated by O1 at t1 = Life L2 instantiated by O2 at t2 iff....

The general reason is that in specifying such persistence conditions it's impossible to drop the reference to the kinds of things that O1 and O2 are, and specifically to the persistence conditions associated with those kinds of things.

To see why, consider the following cases:

Case Absolem: At t1 Absolem is a hungry caterpillar. At t2 Absolem builds a cocoon, and at t3 a beautiful butterfly emerges out of the cocoon.

²¹ The idea that each kind of thing, or that each primary kind, is associated with persistence conditions has been expressed by Wiggins (2001, 61), Lowe (1998, 183), and Baker (2000, 40).

²² My point is conceptual, and does not hinge on what species are (i.e. it does not hinge on any particular metaphysical account of species. For example, even if species are neither sets nor individuals, but kinds (where kinds are not properties), and therefore do not depend on their members in any metaphysical sense, it's still plausible that we cannot grasp the concept of species without grasping the persistence conditions of things that belong to/are members of/instantiate the property of that species. For an overview on the metaphysics of species see Ereshefsky (2010)

Case Odie: At t1 Odie is a happy dog (that instantiates life L1). At t2 Odie undergoes a process similar to metamorphosis: he is chopped up into little bits (tissue and cells) and at t3, at the end of the process, the reaggregated (living) cells form a cat.²³

Case Bob: At t1 Bob is a healthy sponge (that instantiates life L1). At t1 Bob undergoes (chemical or mechanical) tissue dissociation. At t3 the separated tissues are placed together, reaggregate and regenerate.²⁴

How do we know if, in any of these cases, the life we begin with at t1 is identical to the life in later times (e.g. at t2 or at t3)? I will examine two notions of life: a thin and a thick notion. The following discussion will show that the thin notion of life, which does not mention individual organisms, cannot help us find an answer to this question.

A notion of a life is thin only if it does not mention any individual organisms (or owners) of life, and focuses on a life as a certain event (or process). Van Inwagen's characterization of a life is thin, for instance, because it tries to individuate and track a life without reference to its owner. His kind of characterization of a life specifies the boundaries in which the life takes place. From the previous discussion of van Inwagen, we can extract the following characterization of a life:

Thin notion of a life: a life is a spatiotemporally and materially continuous self-directed, self-organizing, non-intermittent, jealous biological event with a metabolism and a natural boundary.²⁵

Persistence conditions formulated with this notion of a life might look as follows (this is, again, following van Inwagen):

²³ While this case, of course, is more far fetched than the other two, it is not quite beyond the pale as one might think. For example, scientists have already constructed what is functionally and behaviorally a jellyfish, but has rat DNA (more specifically, rat DNA and synthetic material). See Nawrowth et al. (2012).

²⁴ Note that the case of Bob is actually not a mere science fiction case. Sponge (porifera) cells can reaggregate after dissociation of tissue (see Wilson 1907; Huxley 1912; Lavrov and Kosevich, 2014, among others).

²⁵ A similar characterization can also be found in Olson 1997. According to Olson, the natural boundary requirement rules out the possibility that the activities of the particles of one's upper half may constitute a biological event that is a life. The event there may be similar to a life, but since the boundary is arbitrary rather than natural, this activity is not a life (1997, 138). Here I also understand "natural boundary" as a condition not only on synchronic identity, but also on diachronic identity.

Thin persistence condition: Life L1 instantiated by x at t1 = Life L2 instantiated by y at t2 iff L1 and L2 are continuous self-directed, self-organizing, non-intermittent, jealous biological events with a metabolism and they are spatiotemporally and materially continuous (where ‘materially’ here just means that there is a continuity of part replacement).

This notion, however, does not let us distinguish between the cases above (Absolem, Odie, and Bob). And this is a bad result because presumably there is something to be said about why, for instance, L1 instantiated by Odie at t1 might not be identical to L3 instantiated by the cat at t3 (and there are two ways to read this: either Odie becomes a cat, or a life can change owners: this criterion of persistence is neutral between the two readings).

Since the thin notion of a life is not very useful for developing a criterion of persistence for lives, a thicker notion might come in handy. A notion of a life is thick if it mentions the owner of a life:

Thick notion of life: a life is a jealous, self-directed, self-organizing, non-intermittent biological event with a metabolism and a natural boundary, and belongs to an owner that falls under a particular substance sortal.

Presumably, this notion allows us to formulate persistence conditions for a life that also distinguish between the cases above:

Thick persistence condition: Life L1 instantiated by x at t1 = Life L2 instantiated by y at t2 iff L1 and L2 are continuous self-directed, self-organizing, non-intermittent, jealous biological events with a metabolism and they are spatiotemporally and materially continuous and x and y fall under the same substance sortal.

This persistence criterion allows us to distinguish between the Case of Absolem, Odie and Bob. In the case of Odie, for example, L1 instantiated at t1 is not identical to L3, instantiated at t3 (when a

cat is formed). But in the case of Bob, L1 instantiated at t1 might be identical to L3 instantiated at t3 (when there is a reaggregation of parts).²⁶

So far I showed that a thick notion of life is needed to formulate reasonably helpful persistence conditions for lives. But that kind of a notion mentions owners of lives, and owners of lives fall under substance sortals. But so far, I haven't showed the circularity involved in this kind of a persistence condition. For, one might argue, there is nothing wrong with assuming that lives always belong to owners, and that since the owners of lives are invariably organisms, they are bound to fall under substance sortals.

The important kind of circularity at play here, however, does not involve a concept presupposing another concept (e.g. the concept of a life presupposing the concept of an organism). Rather, the problem is that the relation of having the same life presupposes the identity of the owners of that life. It is impossible to say what makes the activity of the xs connected to the activity of the ys in the right kind of way (for the lives they constitute to be identical) without referring to the identity of their owners. Without reference to the kinds of owners that the lives belong to, it seems impossible to judge whether a life L1 is identical to a life L2. For instance, how do we judge that in Bob's case it is possible that L1=L3, that in Absolem's case L1=L3, while also judging that in the case of Odie L1 at t1 cannot be appropriately connected to L3 at t3 (or to L2 at t2, during the tissue dissociation)? A persistence criterion based on the thin notion of a life cannot appropriately account for such differences.²⁷

To rule out or to affirm that O1's life is O2's life, we need more than a concept of being causally connected in the right way. In order to know what 'in the right way' means, we need to already have some conception of what it is for, e.g. caterpillars to survive certain changes. It seems that a common way biologists think of the relation between Absolem and the butterfly suggests that Absolem survives as the butterfly; a larva is taken to be a stage of the butterfly's life cycle.²⁸ So in the case of a life L1 that belongs to a larva, the kind of changes that its owner can survive determine the kinds of changes under which we say that the life continues. And these conditions are different from those that, e.g., Odie can undergo. What is doing the explanatory work here is not just a concept of

²⁶ Since material continuity can be read as the condition that the parts are replaced continuously, and not necessarily that they are always physically attached, even separated tissues might count as belonging to the same organism.

²⁷ This seeming "flexibility" or neutrality is not a virtue in this context, because the animalist wants to use life to specify the persistence conditions of organisms, and in particular, human animals.

²⁸ See, for instance, Leimar (1996); Radchuk, Turlure and Schtickzelle (2013).

a particular kind of owner that the life belongs to, but also the persistence conditions associated with that owner.

Long story short, for any L1 and L2 we can establish whether they stand in the required kind of continuity relation to each other only once we know what *kind* of an organism is in question, or more specifically, we need the *persistence conditions* associated with the organism kind in question. For example, if Odie built a cocoon and turned into what appeared to be a different kind of organism – e.g. a butterfly or a moth – we would say that the causal relation between the xs that participated in Odie’s life and the ys that participate in the post-cocoon life is not of the right kind. And the reason we would say that is that the owner that the activity of the xs constitutes at t1, Odie, belongs to a particular natural kind, associated with specific persistence conditions. So any notion of appropriate continuity (or what it is “to result from in an appropriate way”) that figures in a persistence criterion for a life presupposes the persistence conditions associated with the owner of that life. In order to apply the notion of a life being continuous with/causally dependent on/resulting from another life *in the appropriate way*, one must presuppose the persistence conditions of the owner of that life.²⁹

So far, I argued that an attempt to specify the persistence conditions of organisms in terms of lives will end up facing a circularity problem. In the next section I will argue that there is a general dilemma plaguing any attempt to specify the persistence conditions of organisms in terms of some kind of event or process.

5. A General dilemma: trivialization vs. circularity

There is a dilemma about specifying organism persistence in terms of the persistence of an event of any kind (i.e. not just if that event is a life). This dilemma holds for the animalist even if the

²⁹ Some people, e.g. Noonan, find fault with the q-memory suggestion. For example, according to Noonan, q-memory seems to presuppose personal identity. Specifically, the problem with q-memory according to him is as follows. In order to know that the causal connection between Person P1 and person P2 is of the right kind, it needs to be the case either that (i) the connection suffices for P1 to be identical to P2, or (ii) there is a person P3 that is identical to P1 (that bears the relation to P1). To decide whether P1=P2 one should either see nothing wrong with the connection (i) or if (ii), then the concept of an offshoot applies. The relation of “same person as” has either an actual or a counterfactual application. However, it seems that Noonan’s argument is fallacious. For it relies on the claim that q-memory is an all-or-nothing relation. While according to Noonan, finding out whether A=B involves asking whether there is C that is identical to A, most proponents of q-memory can just say that you don’t need to figure out whether something else is identical to it, but to say that it is more strongly connected to A. If I applied a reasoning analogous to Noonan’s here with respect to “same life as”, I would be facing the same problem. But the circularity problem I am raising has nothing to do with offshoots or possible fission. So, the prospects for giving a non-circular criterion of organism persistence in terms of *Mere-life-continuity* are worse than for giving a non-circular criterion of personal identity in terms of q-memory.

relevant events (or processes, or “careers”) that figure in the persistence criteria are not lives. The first horn of the dilemma is the trivialization horn; the second is the circularity horn. I will first introduce the trivialization horn by discussing four-dimensionalism about events and its relation to the attempt to specify the persistence conditions of animals in terms of lives.

According to four-dimensionalism, material objects persist over time by having different temporal parts at different times. One implication of this view is that objects are not “wholly present” at any particular time at which they exist; in Sider’s words, “an object exists at a time iff it has a temporal part that exists at that time” (Sider 1997, 203). According to standard versions of four-dimensionalism, temporal parts of the shortest duration are instantaneous. To cite Sider’s definition again, “x is an instantaneous temporal part of y at instant t =_{df} (1) x exists at, but only at, t; (2) x is part of y at t; and (3) x overlaps at t everything that is part of y at t” (Sider 2001, 59). Four-dimensionalism about objects does not imply Plenitude, the thesis that any objects at any time have a four-dimensional fusion (i.e. the thesis of unrestricted cross-temporal composition). But it typically comes in a package deal with it.³⁰

While there is a heated debate concerning four-dimensionalism about material objects (e.g. Lewis 1976, Sider 1997, 2001, Hawley 2001 vs. Noonan 2003, van Inwagen 2000) four-dimensionalism about *events* is fairly uncontroversial.³¹ Four-dimensionalism about events is the claim that events extend through time (by having temporal parts).³² As in the case of objects, it is natural (though not mandatory) to combine four-dimensionalism with a plenitude picture of events according to which any instantaneous occurrences (“event-atoms”, we might say) in any arbitrary arrangement form a further event. For example: an amoeba dividing is an event; you making breakfast this morning is an event; and the fusion of the amoeba dividing and you making breakfast in the morning is a further event.

Four-dimensionalism comes in two varieties. According to perdurantism (Lewis 1976, Heller 1990, Hudson 2001), our natural language names and pronouns refer to temporally extended, four-dimensional “worms”. According to stage theory (Sider 1996, 2001, Hawley 2001), they refer to

³⁰ For an influential argument see Sider 2001, chapter 4.

³¹ For example, Johnson (1921) Mellor (1980) and Simons (2000). Wiggins also only applies four-dimensionalism to events (1980, 25). For more on this issue see Casati and Varzi (2014).

³² There is a difference between perdurance and stage theory. According to the former, objects persist by stretching through time like a highway stretches through space. When we refer to a four-dimensionalist object we are referring to the entire “worm” that stretches through time. According to stage theory, objects have temporal parts. When we refer to them, we are referring to one of those temporal parts – or stages. A proponent of the former theory is Lewis (1976) and a proponent of stage theory is Sider (1996; 2001). For the present purposes it doesn’t matter which theory we choose, but I present it in terms of stage theory. For an overview see Hawley (2015).

instantaneous temporal parts that persist by standing in appropriate “temporal counterpart” relations to one another. Due to its familiarity and for ease of exposition, in what follows I will write against the backdrop of a perdurantist framework, but most of the points I have to make could also be made on stage theoretic assumptions.

It’s important to observe that on a plenitude perdurantist picture, specifying the persistence conditions of a life is going to be largely a matter of semantic bookkeeping. Lives are events, and given plenitude, they temporally overlap with a large number of similar events, many of them quite “life-like”. Suppose we are interested in the conditions under which L1 at t1 and L2 at t2 are the same life. Given four-dimensionalism about events, there will be plenty of events that have both the relevant t1-segment of L1 and the t2-segment of L2 as temporal parts, and plenty of other events that don’t. So, the question is really whether we use ‘L1’ and ‘L2’ for four-dimensional objects with the same temporal parts (i.e. the same four-dimensional objects, assuming the extensionality of composition) or not. So, when the plenitude ontologist judges that $L1 = L2$, she is not making any ontological discovery. Instead, she is making a semantic decision: ‘L1’ and ‘L2’ refer to a four-dimensional fusion that has both the t1 and the t2 segments as temporal parts, rather than to one of the vast many overlapping events that don’t. Of course, some of these events might be less interesting than others, and independently poor candidates for being lives. The event of an amoeba dividing and you making breakfast this morning is, perhaps, obviously not a life. But other events (for example the amoeba’s career up to its division, or the fusion of that event plus one of the offshoot’s career) are. Either way, the choice among these candidates comes down to semantics.³³

This is important because animalists are typically reluctant to treat the question of organism identity as a semantic question; indeed, the intuition that it’s not a semantic question is often taken to be a mark in favor of animalism and a mark against four-dimensionalism.³⁴ Recall: according to four-dimensionalism, objects persist by being made up of temporal parts that occur at different times. Each of an object’s temporal parts exemplifies its properties atemporally. For example, my present temporal part is (atemporally) sitting and writing this sentence. I persist in the sense that various temporal parts fuse to form a bigger object: me. As Olson puts it,

³³ Of course, so far an animalist can say that clearly, the event of an amoeba dividing is a life, but the event of an amoeba dividing and you making breakfast this morning is not a life. So even if the question boils down to semantics, i.e. to which of these events the term ‘life’ refers to, we can still easily select the relevant event. However, the decision is not always this clear cut; in problem cases such as fission, fusion and transplantation cases it is not clear which event the term ‘life’ properly refers to. More on this shortly.

³⁴ Hershenov (2016), who argues for four-dimensionalist animalism, is an exception. I will later show why a four-dimensionalist kind of animalism does not escape the dilemma.

“like an event, you fill up an interval of time with earlier and later parts. You are stretched across time in something like the way that a highway is stretched out in space. Much as only a part of the highway is present at any point along its length, only a part of you is present at any one time during you career” (1997, 162)

Olson thinks that four-dimensionalism’s assimilation of objects to events is a vice rather than a virtue of the theory. Note, however, that this is precisely because he rejects four-dimensionalism about objects but does not take any issue with four-dimensionalism about events.

One reason Olson objects to four-dimensionalism about objects – e.g. animals – is that it trivializes the seemingly deep question of personal identity (1997, 164-168): when the four-dimensionalist decides that a particular four-dimensional object is the one we should call a person, he is simply making a semantic decision. Since all the candidate objects exist, determining that one of them is properly speaking a person has no ontological consequences for what kinds of objects there are. For example, when faced with the question of whether in the familiar cerebrum transplant scenario I go with the cerebrum or stay behind instead, they can agree about the ontology of the situation: my present temporal part is a part of many objects that have the cerebrum as a future temporal part and of many others that don’t. The only thing left to decide, on which they can disagree, is which one of these objects is the proper referent of ‘I’ (1997, 164).

Now of course, theories that analyze organism persistence in terms of life persistence don’t treat organisms themselves as four-dimensional entities. But that doesn’t matter. As I earlier noted, events are widely agreed to persist by having temporal parts. But given the aforementioned concern with four-dimensionalism, this seems to imply that specifying the persistence conditions of animals in terms of lives (events of a certain sort) similarly collapses a metaphysical question into a semantic one. After all, in the problem scenarios there are several events that are candidates for being an organism’s life (e.g. the caterpillar’s career, the butterfly’s career, the fusion of the two, etc.). And once we admit that, deciding which of these event counts as a certain organism’s life is essentially a semantic question: which event is the referent of the term ‘life L’? Arguably, if the animalist thinks that four-dimensionalism about objects trivializes the project of specifying the persistence conditions of animals, she should think that the question is also trivialized if we try to specify the persistence conditions of animals in terms of four-dimensional entities, whether those entities are objects or events.

At this point, one might be motivated to reject the plenitude assumption, which seemed necessary to generate the problem in the first place – after all, without plenitude, we don't get the vast many candidates among which the choice seems to be semantic. However, I will now show that the assumption can be relaxed, and that the core problem arises even without it. I will then explain more in depth why four-dimensionalism about events – even without the plenitude assumption – is problematic for animalists.

For ease of exposition I assumed a plenitude picture of events when setting up the problem. But I will now discharge this assumption and show that even without this assumption, animalists face the same kind of problem. My point was that on four-dimensionalism, the question of life identity becomes the question of which candidate event is the organism's life, which is a semantic question. While it is easier to make this point by assuming a plenitude theory of events, the problem can be set up with a sparser ontology. That is, I don't need to assume that the process of an organism forming in utero and you making breakfast in the morning is a candidate for being a life. I can simply focus on events that are widely agreed to exist and which are serious candidates for being a life. For example, take the Absolem case: there is an event that is a caterpillar forming a cocoon, which is made up of certain time-slices (event 1). There is also an event, made up of different time-slices, of a butterfly emerging from a cocoon (event 2). There's an additional event, made up of the time-slices of event 1 and of event 2, of a caterpillar forming a cocoon, from which a butterfly emerges (event 3). All three events plausibly exist: they all have natural enough boundaries, and these boundaries are sufficiently non-arbitrary to plausibly delineate genuine events. So while plenitude is a somewhat surprising thesis in need of argument, in the present case the burden is on those who want to deny the existence of all but one of events 1-3. Assuming that all three events exist, which one is L1? Since they all seem to be good candidates for being a life, the question reduces to which one of them 'L1' refers to. And just like in the plenitude case, this question is semantic.

One solution to the trivialization problem is to say that – whatever else we think about four-dimensionalist entities like events, i.e. whether composition is restricted or unrestricted – we can give a principled way of distinguishing between the event that we call life L1 and any other candidate for being a life L1. But now we are back to the familiar circularity problem. For we need to specify the persistence conditions of lives. And this is a problem both for four dimensionalists who think that not everything is a good candidate for being a life, and for three dimensionalists. That is, whenever we try to give a substantive answer to the question “is L1 identical to L2?”, our answer presupposes the identity of the organism in question.

One of the reasons was specified in the discussion above: the thick notion of life may be detailed enough for us to be able to say that $L1=L2$, but only at the cost of a circular account of persistence. For, as we have seen, that notion of a life mentions an owner, which, in turn, is associated with persistence conditions. Though four-dimensionalism is rarely combined with animalism³⁵, the circularity problem also plagues this combination. For example, recently Hershenov has argued that four-dimensionalist animalists can account for the persistence of animals by appealing to the right kind of connection between earlier and later temporal stages: an immanent cause involving earlier stages bringing about later stages (Hershenov talks about thinking stages, but for the present purposes that's immaterial). This suggestion might seem initially promising because the concept of immanent causation – of a temporal part bringing about a later temporal part (see Zimmerman 1997) – might allow us to identify a process over time by appealing to the type of connection between the temporal time slices of the event, and without mentioning an object or an owner that the process perhaps belongs to. Suppose we think that this is a promising way to account of what makes $L1$ identical to $L2$ on a four-dimensionalist account: $L1$ brings about $L2$, so we know they should be identified as part of the same event. How should we understand what counts as the right kind of a connection, or the right kind of immanent causation? To see that the notion of immanent causation does not solve our problem, consider again the cases of Absolem, Odie and Bob. Assuming four-dimensionalism, we can find immanent causation in all three cases. But arguably, to explain why the cases differ in whether an organism survives the respective changes, we need to determine whether slice $s1$ brings about $s2$ *in the appropriate way* (we already know it does bring it about one way or other). And in order to know *that*, we need to appeal to the persistence conditions of the kinds of four-dimensional things the slices belong to. If the temporal slices belong to Odie, then – given the kinds of persistence conditions associated with Odie – it takes so-and-so for them to make up one object. But if they belong to Absolem or to Bob, then given the different persistence conditions associated with Absolem or Bob, it would take something else for these time slices to make up one object. If we only rely on the notion of immanent causation here – of life slice $s1$ bringing about life slice $s2$ - we should say that in all three cases the life slices belong to one larger life event.³⁶

³⁵ Olson gave us one reason that animalists would not want to be four-dimensionalists – they do not think their theory answers a semantic question.

³⁶ Hershenov (2016) claims that immanent causation is the right kind of causal connection between earlier and later (thinking) stages. However, even if immanent causation is necessary for two slices to be appropriately connected, it is not sufficient.

In general, if we give up on the four-dimensionalist framework, we are back to the same circularity problem explored in the previous section. We must mention the persistence conditions of the individual whose life it is, and that seems to be the case whether we think the individual is a four-dimensional object, or a three-dimensional object (as the discussion about the thick persistence conditions showed). So it seems that the animalist is faced with two options: trivialization or circularity. An attempt to answer the trivialization worry will lead back to the concerns with circularity.

Conclusion

I showed that if organic animalists want to provide our persistence conditions in terms of the continuation of life, they face a circularity problem. Organic animalists can try two different approaches to resolve this issue. First, they can try to provide persistence conditions that do not make reference to owners of lives. However, we have seen that this strategy is unsuccessful, because it fails to distinguish between cases like Odie, Bob and Absolem. Second they can give thick persistence criteria that succeed in distinguishing between these cases, but at the cost of assuming persistence criteria associated with individual organisms that fall under specific natural kinds.

I then showed that if we take a step back and look at the strategy of giving the persistence conditions of animals in terms of lives, the animalist faces an uncomfortable decision between trivialization and circularity. According to the first horn of the dilemma, specifying which event one should call a life is simply a semantic question. And this means that the persistence conditions of animals – a substantive ontological question according to animalists – is given an answer that bottoms out at semantics. Of course, animalists can respond by saying that even if events are four-dimensional, we can only call certain four-dimensional events a life because there are specific criteria for distinguishing the relevant kinds of events from those that are bad candidates for being a life. So the animalist might respond to the trivialization horn by trying to account for the identification of a life in a more robust (i.e. not merely a semantic) way, e.g. by offering criteria that make only one event a good candidate for identifying as a single life. However, I argued that this kind of a response leads us back to the circularity problem.

The main purpose of this paper was negative: to show that a popular way of thinking about the persistence conditions of animals faces some serious problems. So what can the organic animalist say in response? Perhaps organic animalists can draw inspiration from proponents of psychological continuity who argue that, e.g. memory is only one component of psychological continuity, and that the relevant notion of psychological continuity is more complex than the memory criterion would have us think.³⁷ Proponents of the psychological view can suggest that there is a plethora of psychological characteristics that persons possess that contribute to their persistence; organic animalists can likewise appeal to a variety of biological characteristics that organisms possess. However, it seems that unlike psychological continuity theorists, it is not as straightforward to appeal to factors other than life, while retaining that (i) persistence is determined wholly biologically and that (ii) organisms are necessarily living things.³⁸

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³⁷ For such attempts see, Slors 2001; Schechtman 2001.

³⁸ For example, one could appeal to structure, or DNA, in addition to the persistence of a life. But this would open the way for somatic animalists to argue that in that case – there is a good way to account for the persistence of animals after death. And one argument in favor of organic animalism is precisely that it is more principled than somatic animalism. See Olson 2013 for this argument, and Tzinman forthcoming for a response.

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