Numerical Personal Identity Over Time

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Numerical Personal Identity Over Time

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Abstract

This honors thesis examines the question of numerical personal identity through time. What are the necessary and sufficient conditions for a human person X that exists at time t* to be numerically identical to a human person Y that exists at time t1? In consideration of this philosophical inquiry, I will explore four of the most prominent accounts of numerical personal identity through time: the Psychological Approach, the Bodily Criterion, the Brain Criterion, and Animalism (the Biological Approach). I will provide the various arguments for and against each approach; however, I will primarily focus on the Psychological Approach and Eric Olson’s Animalism. My thesis will be that Animalism does not provide an adequate answer to the numerical identity question and that a more acceptable answer to the question can be obtained by adopting an alternative somatic approach: part of the brain, the cerebral hemisphere, provides the necessary and sufficient conditions for numerical identity and persistence through time. More specifically, I will introduce a Modified Brain Criterion which states that the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X has an operative cerebral hemisphere that produces either X’s memories, intentions, and beliefs or X’s rudimentary psychological features at time t* that are both strongly connected to and continuous with either the memories, intentions, and beliefs or the rudimentary psychological features produced in person Y’s operative cerebral hemisphere at time t1. Given Olson’s initial assumptions, I will conclude that the Modified Brain Criterion is the most defensible approach to the question of numerical identity through time.
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Introduction

In “The Human Animal: Personal Identity Without Psychology,” Eric Olson addresses a specific question concerning personal identity: what does it take for a single individual to persist through time (Olson 3)? More specifically, what are the necessary and sufficient conditions for a human person X that exists at time t* to be numerically identical to a human person Y that exists at time t1? Olson’s answer to this question is that the necessary and sufficient condition for a human person to persist through time is that the person is a human animal or, more specifically, a human organism. For convenience and simplified acknowledgment, I will frequently use the term ‘person’ in the following content to mean ‘human person,’ unless otherwise stated. My thesis is that Animalism does not provide an adequate answer to the numerical identity question and that a more acceptable answer to the question can be obtained by adopting an alternative somatic approach: part of the brain – the cerebral hemisphere to be exact – provides the necessary and sufficient conditions for numerical identity and persistence through time. I will begin by discussing the five assumptions that Olson makes and then I will examine the alternative approaches that fall under those assumptions, providing both arguments for and against those approaches. I will consider in § 1 the Psychological Approach, in § 2 the Bodily Criterion and the Brain Criterion, and in § 3 Animalism or the Biological Approach. Lastly, in § 4 I will begin by explain the deficiencies of both the Biological Approach and Psychological Approach and then I will argue that of all the approaches to the question of numerical identity that fall under Olson’s assumptions, the most promising approach is the Modified Brain Criterion.

Olson begins his discussion of numerical identity over time by making five assumptions that he acknowledges are controversial, but are necessary to begin his project: first, there is a
nontrivial answer to the question of numerical identity; second, materialism is correct; third, people really do exist; fourth, it is possible to make some distinction that will allow us to know the necessary and sufficient conditions of numerical identity over time; and lastly, that a person exists wholly at one point in time (in other words, a rejection of temporal part ontology) (Olson 4-5). The first two assumptions are required to avoid the debate between idealism/dualism and materialism. If either idealism or dualism turned out to be the correct position, Olson claims that there could only be a trivial answer to the persistence question (Olson 4). The third, fourth, and fifth assumptions establish that persons exist as complex beings which exist wholly as they endure through time. These assumptions avoid the various positions which claim that persons could either (1) consist of monadic parts, (2) have no numerical identity conditions, (3) are programs running on a biological computer, or (4) are temporal parts. The four prominent approaches to the question of numerical identity through time that fall within the parameters of Olson’s assumptions are the Psychological Approach, the Bodily Criterion, the Brain Criterion (a.k.a. the Physical Criterion), and the Biological Approach (Olson’s Animalism).

§1 The Psychological Approach

Olson considers the Psychological Approach to be the most prominent and worthy adversary of his Animalist Approach. The Psychological Criterion – originally proposed by John Locke and championed by such philosophers as Sydney Shoemaker, Derek Parfit, and Harold Noonan – answers the persistence question by stating that the necessary and sufficient condition for a person to persist through time is psychological continuity. In “Reasons and Persons,” Parfit provides the following version of the Psychological Criterion:

*The Psychological Criterion:* (1) There is *psychological continuity* if and only if there are overlapping chains of strong connectedness, X today is one and the same person as Y at some past time if and only if (2) X is psychologically continuous with Y, (3) this continuity has the right kind of cause, and (4) it has not taken a ‘branching’ form.
(5) Personal identity over time just consists in the holding of facts like (2) to (4).
(Parfit 207)

Hence, for person X at time t* to be numerically identical to person Y at time t1, person X’s memories, intentions, and beliefs at time t* must be both strongly connected and continuous in the right causal way with the memories, intentions, and beliefs that person Y holds at t1.

Yet, if personal identity relies on memories, intentions, and beliefs, then the Psychological Criterion appears to involve a circular argument. Bishop Butler was one of the first philosophers to argue that the Psychological Approach of personal identity provided by Locke begs the question. According to Butler, “. . . one should really think it self-evident, that consciousness of personal identity presupposes, and therefore cannot constitute, personal identity, any more than knowledge, in any other case, can constitute truth, which it presupposes” (Butler 100). This charge of circularity equally applies to the later Psychological Criteria of Shoemaker, Parfit, and Noonan. Psychological features such as memories, intentions, and beliefs must have some subject in order to verify that that subject was in fact the one who experienced those psychological phenomena; ergo, personal identity is presupposed in normal memories, intentions, and beliefs. In other words, using normal memories, intentions, beliefs, or some other psychological feature as the basis for the Psychological Criterion of personal identity begs the question, since in all of those psychological states there is a specified subject that presupposes personal identity. For example, I remember sitting down and beginning to write the first sentence of this paragraph. In order to verify this memory of the event that took place, I must presuppose the subject’s personal identity. To know that I remember this event I must know that it was in fact me and not some other person who sat down at the computer and wrote the first sentence of this paragraph. Hence, memory – or any other psychological state – presupposes personal identity and therefore cannot be used to establish personal identity.
Recent philosophers, such as Shoemaker, Parfit, and Noonan, have come up with an interesting response to the charge of circularity. In order to avoid begging the question, Shoemaker (followed by Parfit) proposes a weaker sense of memory: quasi-memory. Shoemaker, in his article “Persons and their Pasts,” explains, “whereas someone’s claim to remember a past event implies that he himself was aware of the event at the time of its occurrence, the claim to quasi-remember a past event implies that someone or other was aware of it” (Shoemaker 340). For example, instead of remembering that I got up this morning and had a cup of coffee, the mental event now consists in the quasi-memory that someone got up this morning and had a cup of coffee. In order to know that I woke up this morning and had a cup of coffee, I must rely on Parfit’s third condition of the psychological criterion concerning causality. I must stand in the correct causal relationship with the ‘someone’ who woke up this morning and had a cup of coffee. Yet, I am causally related in some way to the ‘someone’ who had the cup of coffee this morning by having the quasi-memory. In order to justify that this quasi-memory is correct, though, I must ask my roommate if he observed me drinking a cup of coffee this morning or, as Parfit suggests, the quasi-memory of having coffee must be closely connected to other quasi-memories that I have (Parfit 222). Moreover, there cannot be more than one person who has this particular quasi-memory, which is one of the reasons for Parfit’s fourth stipulation, the non-branching stipulation. The notion of quasi-memory can be expanded to include concepts of quasi-intentions, quasi-beliefs, or other quasi-psychological states that can be used to establish personal identity. If the concept of quasi-memory is added to the Psychological Criterion, then the circularity objection is effectively refuted. According to Parfit, “since the continuity of quasi-memory does not presuppose personal identity, it may be part of what constitutes personal identity. It may be part of what makes me now and myself at other times one and the same
person” (Parfit 222). Ergo, no particular subject is presupposed in quasi-memories, quasi-intentions, or quasi-beliefs, and, moreover, these psychological features can be used to establish personal identity.

Olson contends that one of the strongest arguments for the Psychological Approach to personal identity is what he calls the “Transplant Intuition.” However, in order to draw out the distinction between the Psychological Approach and Animalism, Olson must first augment the traditional transplant argument, which is typically stated as the transplant of the whole brain, to the transplant of the cerebrum from one body to another. Olson explains, “removing your entire brain does not leave behind a living, empty-headed human animal, but rather empty-headed, lifeless remains – an empty headed corpse. Removing an animal’s entire brain either kills the animal or reduces it to a mere detached brain; it does not simply leave that animal without a functioning organ” (Olson 45). It is necessary for Olson to change the transplant case since Animalism, or the Biological Approach, places the identity of the person in the organ that controls the vital functions of the animal and in the case of humans, this organ is the lower brain. Without a functioning lower brain, the biological processes that are essential for life cease and the functioning biological organism – the functioning human animal – no longer exists. Ergo, Olson claims that the whole brain transplant intuition is correct, but not for the psychological reasons typically associated with it. Rather, it is correct simply because the lower brain is transplanted along with the cerebrum.

Olson utilizes Locke’s classical example of Prince and Cobbler, which he alters from whole brain transplant to cerebrum transplant. In this version of the example, Prince has his cerebrum transplanted onto Cobbler’s lower brain. This act creates two new characters: Brainy, who has Cobbler’s body, including Cobbler’s lower brain as well as Prince’s cerebrum and
consciousness, and Brainless, who has Prince’s body, including Prince’s lower brain, without a cerebrum. Olson claims that our intuitions about who is who after the operation are based on moral concerns, relational matters, and prudential concerns. First, suppose that before the operation Prince had saved a little girl from falling off a cliff and Cobbler had robbed a bank. Should Brainy be held accountable for the bank robbery or should Brainy receive an award for heroically saving the child? Intuitively, it would seem that Brainy should be rewarded for his valiant act of saving the child and that neither Brainy nor Brainless should be punished for the bank robbery. Secondly, is Princess married to Brainy or Brainless after the operation? Moreover, is Queen the mother of Brainy or Brainless after the procedure has been performed? It certainly would take some time for Princess and Queen to adjust to the situation, but it seems that Princess would be married to Brainy and Queen would be the mother of Brainy. Lastly, suppose that after the operation Brainless would be in immense pain and Brainy would be pain-free. Who should Prince be concerned about before the operation, Brainy or Brainless? It would seem that Prince should be concerned about the future condition of Brainy, since Prince will experience what Brainy experiences in the future. Olson claims that all of the intuitions in these cases are based on the psychological connection between Prince and Brainy, which therefore provides support for the Psychological Approach to numerical personal identity (Olson 42-70). However, the transplant intuition does not provide a clear answer to transplant cases that involve fission.

In fission transplant cases the cerebrum is removed from the body, split down the middle, and each half is transplanted onto a different lower brain stem that is still attached to its respective body. The result of the operation is two persons, Lefty and Righty, which causes a problem for the Psychological Criterion theorist, since both Lefty and Righty are psychologically
continuous with the original person. According to Olson, “whatever it is that inclines us to say that Prince is Brainy also inclines us to say that you are Lefty, and inclines us to say that you are Righty. If we feel the transplant intuition less strongly in this case than in the previous one, that is because the fact that there are two offshoots somehow makes us uncomfortable” (Olson 46-7).

The unease that we feel in the fission case is due to relationships of transitivity and symmetry, which are usually considered an essential part of the identity relation. The transitivity relationship of identity is: if A = B and B = C, then A = C, and the symmetrical relationship of identity is: If A = B, then B = A. Say that B is Prince before the fission operation, A is Lefty, and C is Righty. After the operation B = A and B = C. Using the symmetrical relationship of identity, B = A can be changed to A = B, which can be combined with B = C to produce the transitive relationship if A = B and B = C, then A = C. But this cannot be correct in the fission case. Suppose that after the operation Lefty goes to college in New York to study philosophy and Righty travels to China to learn kung fu. The conditional is then false; A = B and B = C is true while A = C is false, since A is learning about philosophy in New York and C is learning about kung fu in China; therefore, A ⫰ C.

There are three possible responses to this dilemma. First, either Prince is Lefty rather than Righty or Prince is Righty rather than Lefty. However, Olson argues that it will be completely arbitrary which one we decided is correct and “if [Prince] were Lefty and not Righty, that would be a ‘brute,’ unexplainable fact. There would be no way of knowing which one [was Prince], for each rival would be equally convinced that he was [Prince]” (Olson 47). A second option is that Prince is neither Lefty nor Righty, the person that was Prince does not exist after the operation. This conclusion is Parfit’s view. Parfit explains, “. . . I claim that there is a best description of the case where I divide. The best description is that neither of the resulting people
will be me” (Parfit 260). Ergo, Parfit explicitly creates a non-branching clause in his version of the Psychological Criterion. Yet, Olson explains that it is common to think that in a transplant case where one of the hemispheres was transplanted and the other was destroyed, a non-branching case that fulfills Parfit’s fourth requirement, Prince would be the individual who received the half hemisphere transplant. Why should it be the case that Prince is destroyed if there are two versions of him after the operation? If Prince will be destroyed in the fission operation, he should take care and make sure that one of his hemispheres is destroyed so that he can continue to exist (Olson 49). However, Parfit argues extensively in part 3, chapter 12 of “Reasons and Persons” that what matters in survival is not tied to the numerical identity relation, but is rather tied to Relation R which is psychological continuity with the right causes. The fission case would be as good as, if not better, than normal survival tied to identity (Parfit 261).

A third option is that there are actually two individual persons to begin with and when you split them apart in the fission case, you still have a one-to-one relationship. Harold W. Noonan, in his book “Personal Identity,” argues that there are actually three people involved in a fission case: there is one person in each hemisphere and there is the set which also counts as an individual. According to Noonan, “on this definition three people are involved in a fission case (assuming just two tied continuers): two of them survive the fission and one does not . . . [and] I must acknowledge that I look forward to an event after which I will not exist, even though each of the survivors of the fission will be able to say truly on looking back on the fission: ‘I existed before that happened’” (Noonan 228). Olson argues that double occupancy theses, like Noonan’s, are incorrect. He uses the analogy of a person saying before the fission operation that he is going on a trip. After the operation, it ends up that Lefty goes on the trip and Righty stays home. If we adopted Noonan’s tripartite theory, then when the person composed of the other two people said
“I am going on a trip,” that person was saying something that was half true and half false and Righty, who stays home, would have been saying something false (Olson 48).

I will now describe Olson’s three basic objections to the Psychological Approach. One of the basic arguments that he provides in support of abandoning the Psychological Approach is what he calls the fetus problem. According to Olson, “both biological science and folk wisdom seem to tell us that each human person was once a fetus” (Olson 73). After the gestation process has been completed, a human infant will be born and the infant will eventually develop into an adult human person. “The problem,” Olson argues, “is that a human fetus less than about six months old does not have any interesting psychological features” (Olson 73). Ergo, the fetus could not be psychologically continuous with the person that it will eventually become. Olson goes on to claim that the Psychological Approach is usually stated in such a way that the person cannot be connected to the young infant that she once was. This is due to the fact that it is unlikely that she has any memories that are continuous or connect in the correct way with the infant. Olson explains, “it is not likely that you are connected by a chain of overlapping memories or the like to a six-month-old infant; the child’s brain simply lacks the capacity to remember or intend much of anything” (Olson 75). Hence, if the Psychological Approach is correct, then a person pops into existence roughly when the child is two years old. Olson contends that this objection has not been noticed by the advocates of the Psychological Approach, in part because the question of identity is typically stated as the relationship between person A at time t* and person B at time t1, assuming that a person must have particular higher order mental capacities such as rationality (Olson 77). Olson explains, “because no fetus could be the same person as anyone, whether anyone was ever a fetus or whether any fetus is later a person is not a question about ‘personal’ identity at all, even if it a question about our identity”
(Olson 77). He concludes that many philosophers have not noticed the fetus problem in part because of the way in which the question of numerical personal identity has been formulated.

Olson claims that there are two possible responses to the fetus problem available to the psychological theorist. One way in which the psychological theorist can deal with the fetus problem is to diminish the importance of the problem. It might be astonishing to find out that persons do not start out as fetuses; however, this discovery is one that we can deal with. The second response available to the psychological theorist is that the Psychological Approach is compatible with the idea that people were once fetuses. Olson claims that there are two further options within this approach: either the fetus ceases to exist after the psychological person begins to exist or the fetus coexists alongside the psychological person (Olson 76-9). However, Olson contends that there are problems with each psychological response. Why would the fetus cease to exist just because it has acquired psychological abilities? If the fetus continues to exist and develops into a thinking human animal and there is a numerically different psychological person that is thinking, how can one be justified in thinking that she is the psychological person and not the thinking animal? After all, on this account each human being is composed of a thinking animal and a psychological person and both are capable of having the thought ‘I am the psychological person and not the thinking animal.’ [Note: this is the “too many thinker argument” that will be explained in greater detail later.] What makes the psychological person numerically different from the thinking animal? Olson considers two possible answers to the aforementioned questions. First, it could be argued that the Psychological Criterion only applies to persons persisting through time (i.e. not fetuses) and is future directed; ergo, there must be a separate criterion for fetuses. Olson proposes a possible persistence criterion that he calls TRICK. This criterion is a disjunction containing a biological persistence condition and a
psychological persistence condition, where the biological persistence condition identifies the particular fetus with the future psychological person that it will become (Olson 80-4). Olson argues, “One potential difficulty for TRICK is that the transition from non-person to person might be gradual rather than abrupt. It seems quite likely that there were times when I was neither definitely a person nor definitely a non-person, and it is not clear what, according to TRICK, it took for me to persist then” (Olson 84). The second possible answer that Olson provides is based on a second-order capacity. He explains that the psychological theorist could argue that the fetus has the future potential, the second-order capacity, to become a thinking person and he devises a possible psychological criterion called COMPROMISE that embraces this potential. Yet, Olson argues the second-order capacity to become a thinking person works equally well for the Animalist Approach. The potential to become a rational thinking being is shared by a person who is brain dead, since it is possible for the person to receive a cerebral transplant and once again become a rational thinking person (Olson 86-88). Olson explains, “the ‘ordinary’ cerebrum transplant would be a fission case like the one in which each half of your cerebrum is implanted into a different head. So it is far from clear that COMPROMISE can accommodate the sorts of considerations that motivated the Psychological Approach in the first place” (Olson 88). Hence, neither TRICK nor COMPROMISE provides the psychological theorist with a satisfactory solution to the fetus problem.

The second basic argument against the Psychological Approach that Olson posits is based on the possibility that at some point in time in the future a person could end up as a human vegetable. Olson proposes a thought experiment where you are to imagine that the neurons in your cerebral cortex are destroyed while the more resilient structures of your lower brain remain functional. As a result, you no longer have and will never again have any psychological features,
such as memory, intentions, beliefs, and so on (Olson 7). According to the Psychological Approach, there must be some psychological continuity and connectedness for a person to exist and persist through time. Hence, in the human vegetable thought experiment, you cease to exist when your cerebral cortex is destroyed and you are replaced by a human vegetable. However, Olson argues, “although it cannot think or remember or feel anything, though, the resulting being is also a living human animal. It can breathe, circulate its blood, regulate its internal temperature and rate of metabolism, digest its food, fight off infection, grow and repair damage to itself, and so on, without any outside help. Where did the animal come from if it is not you” (Olson 88)? As in the fetus argument, Olson claims that the answer to this question is either that the person ceases to exist and is replaced by the animal, or the animal coexisted alongside the person the whole time (Olson 88-9). The latter option – the coexistence of a thinking person and a thinking animal – leads to Olson’s last basic argument against the Psychological Approach: the “too many thinkers” argument.

One of the possible solutions to both the fetus problem and the human vegetable problem is the proposal that both a person and a thinking human animal coexist, or in Olson’s terminology, “cohabitate.” Olson, in “What Are We? A Study in Personal Ontology,” provides his clearest formulation of the “too many thinkers” argument, which he believes effectively refutes the coexistent option. Olson argues:

Suppose human animals think in just the way that we do: every thought of yours is a thought on the part of the human animal. How could that thinking animal be anything other than you? Only if you are one of at least two beings that think your thoughts. (Or maybe you and the animal think numerically different but otherwise identical thoughts. Then you are one of at least two beings thinking exactly similar thoughts.) If you think, and your animal body thinks, and its not you, then there are two thinkers sitting there and reading this book. Call this the cohabitation view. (Olson “What Are We?” 35)
Olson goes on to identify three problems with this position. First, if the cohabitation view is correct, then when we say that Jill has completed her homework we mean that the psychological person Jill and the thinking animal Jill have finished their homework. Secondly, how does Jill know that she is the psychological person and not the thinking animal? It seems likely that the thinking animal would find the Psychological Approach just as appealing as the psychological person does and the thinking animal would consider itself to be the psychological person; yet, the thinking animal could not be the psychological person because it is the thinking animal. Olson asks: how do you know that you are not the thinking animal that is mistakenly thinking that it is the person? The third problem with the cohabitation view is that the thinking animal fits all the criteria for being a psychological person and should therefore be considered a person (Olson 35-7). In order to provide a definition for the term ‘person,’ Olson utilizes a version of Locke’s traditional definition for that term. According to Locke, “... we must consider what person stands for; which, I think is a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places; which it does only by that consciousness which is inseparable from thinking, and, as it seems to me, essential to it...” (Locke 128). Olson argues that the thinking human animal has all of the criteria needed to be a person and should therefore be considered a person. However, this would entail that there are two persons, the purely psychological person and the thinking animal person, which is unacceptable. Not only would there be two people sharing a single thought, it seems impossible to find out which person you actually are: the psychological person or the animal person. Olson claims that if you deny that the thinking animal is a person, then there would be an entity that shares all of our attributes, but is not a person. Then there would be a possibility that we are not persons at all; rather, we are only rational thinking animals (Olson 37). For these reasons, Olson
contends that the Psychological Approach is erroneous. I will now consider two other alternative approaches to the numerical identity question.

§ 2 The Bodily Criterion and the Brain Criterion

An alternative answer to the question of persistence over time is to say that the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s body is related to person Y’s body; which is commonly call the Bodily Criterion of personal identity. Judith Jarvis Thomson, in her article “People and their Bodies,” argues for the Bodily Approach. According to Thomson, “I feel inclined to think that this fleshy object (my body is what I refer to) isn’t something I merely currently inhabit: I feel inclined to think that it is me” (Thomson 202). Thomson argues that this ontological thesis – the Physical Thesis that states that a person is her body – leads to what she calls a Physical Criterion (or what Olson calls a Bodily Criterion) of identity. However, it is important to note that both Thomson and Olson clearly state that a person could hold the view that the Physical / Bodily Criterion is correct, but still believe that she is ontologically different than her body, since Physical / Bodily Criterion does not entail that a person is her body (Thomson 204 & Olson 142). Nonetheless, Thomson explains, “I should imagine, however, that anyone who accepts Physical Criterion is very likely to accept Physical Thesis as well; I should imagine, in fact, that anyone who accepts Physical Criterion accepts it precisely because he or she accepts Physical Thesis” (Thomson 204). Thomson accepts the Physical Thesis and goes on to argue for the Physical Criterion.

One of Olson’s main concerns with the Bodily Approach is to draw a distinction between a certain version of the Bodily Approach and the Biological Approach. Olson initially claims that the Biological Approach, Animalism, is neutral concerning the relationship between people and
their bodies, and that Animalism does not entail that people are not related to their bodies through time (Olson 143). However, a key concept of Animalism (which will be explained in detail later) is that what constitutes the animal’s identity over time is the uninterrupted continuation of its biological life. Olson argues, “. . . if ‘my body’ is supposed to be a material object other than myself, this human animal, then there is no such thing as my body” (Olson 150). Yet, one version of the Bodily Approach seems to entail that a person is numerically identical with the inanimate body that remains after that person dies. This is the corpse problem. If a person is essentially her body, then at some time in her life she will be numerically identical with a corpse. Thomson, early in her article, contends that “. . . a thing can certainly be, at t, both a man and unconscious [and] . . . a thing can even be, at t, both a man and dead” (Thomson 203). Thomson goes on to explain that someone might object to her use of ‘man,’ that what we are really concerned about are not people, but rather persons. Her reply is to state that she thinks most philosophers are actually thinking about people rather than persons in their theories and the only reason that they use ‘persons’ is that they are arguing against the Bodily Criterion (Thomson 203). Hence, Thomson’s Physical (Bodily) Criterion is incompatible with Olson’s Animalist Approach since the Animalist position stipulates that the continued biological life of an organism accounts for numerical identity through time and therefore a person could never become a corpse.

Yet, why should we think that we – the living animals – are numerically different from our corpses? Olson argues that part of the reason that we think that we are corpses after we die is a linguistic mistake. The term ‘body’ is often used to refer to a corpse; for example, when a corpse is found in a river, the attending police officers might say: “there is a body floating in the river.” Nevertheless, Olson points out that not all languages contain similar concepts that are
interchangeable and that the linguistic phenomenon of using ‘body’ in place of ‘corpse’ provides very little evidence for the claim that we are our bodies (Olson 150-1). Moreover, he claims that there are many differences between a living animal and a dead body. Olson explains, “the changes that go on in an animal when it dies are really quite dramatic. All of that frenetic, highly organized, and extremely complex biochemical activity that was going on throughout the organism comes to a rather dramatic end, and the chemical machinery begins immediately to decay” (Olson 151-2). He goes on to claim that the defining moment is when the organism dies and that the decay of the resulting corpse is a slow process that takes many years, which lacks a recognizable or precise moment when the corpse no longer exists. The slow decay of a rotting corpse is therefore quite dissimilar from the active life of the animal and the two should be considered different entities separated by a definitive event, the end of the animal’s biological life.

Even though Animalism is incompatible with Thomson’s Physical (Bodily) Criterion, Animalism is compatible with a slightly altered version of Thomson’s Physical (Bodily) Criterion. In order to make the Bodily Criterion compatible with Animalism, the Bodily Criterion needs to be restated as: the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s body is related to person Y’s body in the correct kind of way. Noonan claims that the Bodily Approach is the “most natural theory of personal identity” (Noonan 2). He contends that when we think about the numerical identity of material objects other than human persons, the natural criterion we use to establish numerical identity is sameness of physical form. Furthermore, Noonan explains, “an artifact, like a ship, or a living thing, like an oak tree or a horse, persists through time. Its persistence does not consist in its retention of matter – for artifacts can be
repaired and patched up and living things are necessarily involved in a constant exchange of matter with their environments – but in its retention of the same form as its matter undergoes gradual replacement” (Noonan 2). A human body can undergo change; ergo, the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s body is related to person Y’s body in the correct kind of way, which is gradual replacement and growth. This version of the Bodily Criterion is compatible with Animalism and entails that a human body is not identical to a corpse, since a corpse does not undergo gradual replacement and growth. The Bodily Criterion also accounts for a person beginning his or her career as a fetus, due to the fact that the fetus replaces the matter that it is composed of and grows, and the possibility that someday a person could end up a human vegetable, since a human vegetable that continually receives nutrients will also exchange its matter and grow.

Still, there are other problems facing either version of the Bodily Criterion. First, the Bodily Criterion is incompatible with the commonly held Transplant Intuition. The Transplant Intuition is the belief that if person A’s cerebrum is transplanted onto person B’s lower brain, then person A will persist through the operation and obtain a new body. If a person is her body, then she does not go along with her cerebrum when it is transplanted into a different body. Moreover, she does not necessarily go to the new body if her whole brain is transplanted, which makes the Bodily Criterion incompatible with the Animalist Approach – which is essentially based on the person being his or her lower brain that controls the various biological processes that are necessary for life. It is possible that the doctors could transplant person A’s whole brain and hook up her body to a machine that keeps the brainless body alive. In that case, person A remains in the brainless body and the body that receives the brain in the transplant operation.
remains the same person, person B, he was before he received the brain; with the addition of foreign memories, beliefs, and intentions. Nevertheless, Thomson explains, “. . . intuitions in this area are merely openings for discussion, not closings” (Thomson 206). As Olson argued in the section on the Psychological Approach, the Psychological Criterion faces its own problems with certain transplant cases, such as the fission transplant case, and must utilize a non-branching clause to solve the problem. Hence, the discussion is still open.

Another problem with the Bodily Criterion is even more critical. If the Bodily Criterion is correct and a person is essentially his or her body, then how much mass or how many parts of a person’s body can be lost before the person is no longer identified with the remaining parts of his or her body? Olson asks, “. . . what does it take for my body to survive? When does someone picked out at one time and someone picked out at another time have the same body? What happens to my body when you cut off my arm, for example? Does my body get a bit smaller and ten pounds lighter? Does it become a spatially scattered object? Does it make a difference if you off my head instead of my arm” (Olson 143)? These questions pose difficulties for the theorist who adopts the Bodily Criterion. Thomson considers the most difficult scenario for the philosopher who endorses the Bodily Criterion – one in which an individual has his parts slowly replaced and the old parts are used to create a second body. After all of the parts have been replaced, who is who? According to Thomson, “I am inclined to think that ‘One is, but it’s indeterminate which’ is as good an answer as any . . .” (Thomson 224). However, it seems that at the end of the process the person with completely new parts is the same person who began the process and the person built out of the discarded parts is at best a clone.

One possible explanation for this, as well as an answer to the problems that Olson proposes, is that a person is his or her brain. Instead of relying on the identity of the whole body
to establish numerical identity, one could rather base numerical identity on what many consider to be the most important organ in the human body – the human brain. Noonan explains, “one part of the body – the brain – seems to be of crucial importance in determining the psychology of the person whose body it inhabits. Damage to someone’s brain can cause amnesia or radical changes in personality or character. Not so for damage to, say, one’s left knee” (Noonan 3). The Brain Criterion for numerical identity can be stated as: the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s brain is related to person Y’s brain in the correct kind of way, which would allow for the gradual replacement of matter and new neural connections. Furthermore, since the psychological functions of the brain are responsible for motivating the brain criterion, it is reasonable to assume that the theorists supporting the brain criterion are also concerned with person X’s whole cerebrum being related to Y’s whole cerebrum in the correct way – psychologically. Thomas Nagel, in his article “The Self as Private Object,” claims:

I am whatever persisting individual in the objective order underlies the subjective continuities of that mental life that I call mine. But a type of objective identity can settle questions about the identity of the self only if the thing in question is both the bearer of mental states and the cause of their continuity when there is continuity. If my brain meets these conditions then the core of the self – what is essential to my existence – is my functioning brain. (Nagel 206)

The advantages of the Brain Criterion are that it provides a correct answer to the fetus problem, nullifies Olson’s too many thinkers argument, and it corresponds with the prevalent intuition in the basic transplant case.

One of the results of adopting the Brain Criterion is that it provides an account of a person beginning his or her career as a fetus. In “What Are We: A Study in Personal Ontology,” Olson explains, “physiologists tell us that our brains come into being early in our gestation, before arms and legs appear, and long before we are capable of having any mental properties. If
they are right, then according to the brain view that is when we begin” (Olson, “What Are We?” 85). Nevertheless, the main reason for adopting the Brain Criterion in the first place was that the brain is the center of a person’s mental life; yet, this mental life appears to emerge well after a person’s brain first begins to develop, which could be seen as problematic for the Brain Criterion theorist. It could be argued, however, that the processes that take place in the fetus and the emergent fetal brain are necessary to produce the resulting psychological being. Another advantage of the Brain Criterion is that it provides an answer to the too many thinkers problem. Olson contends, “anyone who believes that we are not animals needs to say something about those human animals that appear to think our thoughts [and] . . . friends of the brain view can answer that in the strictest sense human animals don’t think our thoughts: they only think in a derivative sense of having brains that think” (Olson “What Are We?” 78). Lastly, the view that we are our brains corresponds with the prevalent intuition in the basic transplant case, where person A’s brain is placed in person B’s body. As Olson claims, most people think that the resulting person is person A and that person A has acquired a new body. According to the Brain Criterion, this intuition is correct and the resulting person after the transplant operation is person A.

Nonetheless, the Brain Criterion does not provide an adequate answer to the problems involved in fission transplant cases, the destruction of part of the brain, and cases that involve the replacement of part of the brain with non-organic parts. In fission transplant cases, person A’s brain is taken out of body A, split down the middle, and the right hemisphere is placed in body B and the left hemisphere is placed in body C, which results in two persons, Lefty and Righty. Is person A now Lefty or Righty? Or is person A both Lefty and Righty or neither? The Brain Criterion does not provide a clear answer to these fission transplant questions. According to
Noonan, “in a normal adult the two hemispheres are connected and communicate by a bundle of fibres – the corpus callosum. But in the treatment of some epileptics these fibres were cut. It was this that led to the discovery of the independent functioning and (typically) different roles of the hemispheres” (Noonan 5). Ergo, it is possible that both Lefty and Righty could wake up after the transplant operation each believing that she was person A, and since the brain can be split down the middle and still function correctly, the Brain Criterion cannot help us determine who is who. A second problem with basing numerical identity on the sameness of brain is that people can function after traumatic brain injuries that destroy part of their brains. Moreover, Olson argues, in “What Are We? A Study in Personal Ontology,” that it seems possible in the future that these damaged parts of brains could be replaced by manmade synthetic devices or that whole brains could even be replaced with synthetic brains (Olson “What Are We?” 84-5).

One possible way to deal with these problems is to modify the Brain Criterion. Parfit, in “Reasons and Person,” proposes an alternative Brain Criterion that he calls the Physical Criterion. Parfit formulates the Physical Criterion as:

**The Physical Criterion:** (1) What is necessary is not the continued existence of the whole body, but the continued existence of *enough* of the brain to be the brain of a living person. X today is one and the same person as Y at some past time if and only if (2) enough of Y’s brain continued to exist, and is now X’s brain, and (3) this physical continuity has not taken a ‘branching’ form. (4) Personal identity over time just consists in the holding of facts like (2) and (3). (Parfit 204)

The Physical Criterion, with the non-branching clause, avoids the problem of fission transplant cases. I suppose that the answer to such cases would be that neither Lefty nor Righty is person A after all. However, if one hemisphere is destroyed and the other survives, then the surviving hemisphere would be identical with person A. One could go on to argue that even though there are two survivors in fission cases, the identity relationships between Lefty and Person A and Righty and Person A both endure as if there were only one survivor; ergo, it would be
indeterminate if Lefty is person A, Righty is person A, or if both Lefty and Righty are person A. Nevertheless, the Physical Criterion does provide a clear answer to the two other problematic cases. Damaged parts of brains can be replaced with synthetic parts and the person will remain the same person as long as enough of the brain remains in the patient’s head; which would entail that that part of the brain that remains in the patient’s head is still functioning. In cases where the brain is completely replaced by a synthetic brain, the patient either ceases to exist completely or else ceases to exist by becoming a different person when the last functional part of the brain is removed from his head.

These answers are not completely satisfying and there are further problems with the Physical Criterion. Noonan utilizes Bernard Williams’s account of the informational storage and transfer device which Williams introduced in his book, “Problems of the Self,” to provide a further objection to the Physical Criterion. According to Williams, “. . . we can imagine the removal of the information from a brain into some storage device (the device, that is, is put into a state information-theoretically equivalent to the total state of the brain), and is then put back into the same or another brain” (Williams 79). Williams goes on to explain that the process of this device is causally equivalent to normal memory processes, since the information the patient received from the machine would not be relearned, like information that is written down (Williams 79-80). Ergo, it is possible that person A could have her memories stored in Williams’s device, have her brain removed and replaced by person B’s brain, and have the memories contained in person B’s brain replaced with the memories of person A using Williams’s device. The resulting person would be psychologically continuous with person A and would have almost the same body as person A (she has a new brain); yet, according to the Physical Criterion, she would not be identical to person A. Moreover, Noonan explains, “. . . it
is implicit in [the Physical Criterion defender’s] position that the reason why (part) brain identity should be preferred to bodily identity as a criterion of personal identity is that it is the brain and not the rest of the body that carries with it psychological identity – identity of memory, personality and character” (Noonan 7). He goes on to explain that Williams’s device performs the same function as the brain, maintaining the important psychological features of the individual. Ergo, the main reason for adopting either the Brain Criterion or the Physical Criterion has been undermined. Therefore, Noonan claims that the Physical Criterion should be discarded (Noonan 7-8).

Another problem with both the Brain Criterion and the Physical Criterion, according to Noonan, is the logical possibility that there could be other persons who do not have brains. Both the Brain Criterion and the Physical Criterion claim that the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s human brain, or enough of X’s brain, is related to person Y’s human brain at time t1, and the main reason for adopting either criterion is that the human brain causally produces the psychological features that we typically associate with personhood. However, it is logically possible that there could be beings that have similar psychological traits, yet do not have human brains. Noonan utilizes Locke’s account of the rational parrot who is not a man yet is a person (Noonan 8). Noonan contends, “. . . if there can be persons other than human beings there seems to be nothing inconceivable about the idea of persons other than human beings in whom no bodily organ occupies the role the brain occupies in the human organism” (Noonan 8). For example, it is a logical possibility that there could exist a race of demons that do not have physical bodies, no organs of thought, but have psychological features that are similar to humans; memories, beliefs, intentions, and so on. If such creatures exist, then neither the Brain
Criterion nor the Physical Criterion would pertain to them. Noonan argues that to hold the Physical Criterion of numerical identity, one must adopt a different criterion for each different species of person, which seems impractical; hence, both the Brain Criterion and the Physical Criterion of identity through time should be abandoned (Noonan 8-9). The last somatic position that I will evaluate will be Olson’s Animalism, otherwise known as the Biological Approach.

§ 3 Animalism (The Biological Approach)

Olson begins his positive argument for Animalism in “The Human Animal: Personal Identity Without Psychology” by explicating the finer details of the Biological Approach. According to the Biological Approach, each of us is a human animal and in order for that organism to persist through time there are certain biological functions that must continue to take place. First, Olson argues that metabolism – the process of taking in molecules and changing the molecular structure of those molecules in order for them to be utilized in the organism – is essential for the organism to live and persist through time. Second, he contends that in order for an organism to persist through time, it is essential that there is a teleological organization of both the organism’s structure and biological processes. Then, Olson points out that organisms are composed of extremely complex biochemical structures that are organized by a complex system of DNA and RNA (Olson 127-30). Olson explains, “. . . it seems reasonable to say that a living organism is anything that has these ‘life-giving’ features – metabolism, teleology, organized complexity – and whatever further properties necessarily go along with them, such as self-directed growth and development, an internal genetic plan, low internal entropy, and perhaps the capacity for evolution by natural selection” (Olson 130). Next, Olson argues that the identity of a human animal is connected to the continuation of the coordination of the life sustaining functions of that very organism, which are regulated in the brainstem. Olson concedes that
cutting off a person’s head produces headless remains, which are not alive, and a detached head, which remains a debilitated living animal until it dies of oxygen starvation (Olson 131-5). According to Olson, “all of this suggests that an animal, or for that matter any organism, persists just in case its capacity to direct those vital functions that keep it biologically alive is not disrupted” (Olson 135). Hence, Olson claims that there are no such things as dead animals because an animal that loses its ability to regulate its life sustaining functions ceases to exist. Lastly, he utilizes Locke’s definition of life to argue that the concepts of organisms and lives are equivocal. This provides Olson with a new definition of the persistence conditions for animals: an animal X that exists at time $t^*$ will be numerically identical to an animal Y that exists at time $t_1$ if and only if animal X’s life (vital functions) is causally continuous with animal Y’s life (vital functions) in the correct kind of way (Olson 135-8). Olson claims that his Animalist Approach to the question of numerical identity over time accounts for persons beginning their lives as fetuses (specifically, when the early cells of the organism become specialized, work in a coordinated manner, and form a “primitive streak” that will develop into the spinal cord), with the potentiality of ending up a human vegetable, and avoids the too many thinkers problem.

One of the positive aspects of the Animalist account of numerical persistence over time, according to Olson, is that it takes into account a person beginning his or her career as a fetus and it also allows for the potentiality that a person could end up a human vegetable. Olson explains, “a human vegetable that can be kept alive with a feeding tube is still a living human animal, even though it no longer has mental functions [and] a four-week-old human embryo is also a living human animal: it has its own DNA, its own closed circulatory system, its own blood type, its own immune system, and the primitive beginnings of its own nervous system” (Olson 89). Ergo, the Animalist Approach avoids the central problem associated with both the fetus
problem and the human vegetable problem; respectively, accounting for the fetus after the numerically different psychological person comes into existence and explaining where the numerically different human vegetable comes from after the psychological person no longer exists; both of which Olson contends are problematic for supporters of the Psychological Approach. According to Olson, the answer to both the fetus problem and the human vegetable problem is that there is exactly one entity that begins his or her career as a fetus and could potentially end up a human vegetable, and that entity is the human animal that is present in both cases (Olson 88-91). Another positive aspect of Animalism is that it avoids the too many thinkers problem. One of Olson’s arguments against the Psychological Approach was that if there are human animals (which most philosophers acknowledge) and psychological persons, then there are two thinkers: the psychological person who thinks and the human animal who also thinks. He then asks the question, which thinker are you? Are you the thinking psychological person or the thinking human animal? Olson’s Animalist Approach avoids the too many thinkers problem by first arguing that a human animal is capable of thinking and that its thoughts are identical to the person’s thoughts. Next, Olson contends, “. . . if the animal thinks your thoughts, then surely it is you. You could hardly be something other than the thing that thinks your thoughts” (Olson “What Are We” 29). Hence, the entity that is sitting here thinking about numerical identity over time is not some psychological being; rather, it is this particular thinking human animal. Yet, is the being sitting here thinking about philosophical problems an animal?

Dean Zimmerman, in his article “Problems for Animalism,” challenges Olson’s too many thinkers argument with what he calls the rival candidates problem. According to Zimmerman:

Olson’s argument is an instance of the following argument schema:
(A) There is a human-shaped F in the room.
(B) If there is a human-shaped F in the room, then it is thinking.
(C) You are the one and only thinking being in the room.
Conclusion:
(D) You are an $F$.
Several terms besides ‘human animal’ can be substituted for $F$ to yield premises with at least some plausibility. (Zimmerman 24)

Some of the alternative answers for $F$ that Zimmerman considers are: a human body – which would explain becoming a corpse; a psychological person – which adheres to the transplant intuition; or a “mere hunk of matter.” He goes on to argue that Olson must reject all of the other possible $F$s and that in doing so, Olson must accept what Zimmerman calls “biological minimalism,” which entails that there are no brains or bodies in the room thinking. Zimmerman contends that denying the existence of such things as brains or bodies brings into question the validity of premise (A) (Zimmerman 24-9).

Olson considers Zimmerman’s rival candidate problem more disconcerting than most other objections to the Animalist Approach. Olson, in his “Replies” section, does not provide an overwhelmingly optimistic response to Zimmerman’s rival candidates problem. He contends that there are three undesirable choices: either he could deny that the other $F$s can think like the human animal, or he must somehow explain how he could know that he is in fact the thinking human animal, or he could argue that the other $F$s are nonexistent (Olson “Replies” 39). Olson concludes, “these choices are not very nice. I’ve never seen a good explanation why my head (if it exists) should be unable to think as I do, or a satisfying account of how I could know that I am not my thinking head. Nor am I happy about denying the existence of heads” (Olson “Replies” 39). Olson then considers the various answers to the rival candidate problem, such as: (1) there is no clear answer to the problem and a person is all the rival candidates, which he contends leaves us not knowing what we are; (2) claiming that the rival candidates do not exist, which leads to directly to Zimmerman’s argument – why think that animals exist and that brains or bodies are nonexistent; and lastly (3) accept that the rival candidates do not exist and argue that
individual particles make composite objects that are the organisms, which Olson accepts, but does not consider to be a very strong response to Zimmerman’s argument (Olson “Replies” 39-41). Hence, if the Animalist Approach is correct, then there cannot be such things as thinking brains, which seems unacceptable. Therefore, the too many thinkers argument does not provide Olson with a decisive argument against any other approach which claims that we are one of the rival candidate thinkers.

Another primary problem for the Animalist Approach is the traditional transplant intuition. In the slightly altered version of Locke’s Prince and Cobbler transplant case, Olson explains that Prince’s cerebrum is removed from the rest of Prince’s brain and is surgically attached to Cobbler’s lower brain, which is still connected to Cobbler’s body. After the operation there are two new characters, Brainy and Brainless. Brainy has Prince’s cerebrum, along with all of Prince’s psychological features, and Cobbler’s lower brain, which controls the biological life functions of Cobbler’s body, as well as Cobbler’s body. Brainless does not have a cerebrum, but does have Prince’s lower brain, which controls the biological life functions of Prince’s body, as well as Prince’s body. After the operation, is Prince Brainy or is Prince Brainless? If the Psychological Approach is correct, then Prince becomes Brainy after the operation, since Brainy’s psychological features are identical to Prince’s psychological features. Ergo, Prince should be worried about the treatment of Brainy after the operation, Brainy is morally responsible for the actions of Prince before the operation, and Brainy is married to Princess and is the son of the Queen. In “The Human Animal: Personal Identity Without Psychology,” Olson explains, “because I accept the Biological Approach, I am committed to saying that the argument’s premise is false: you don’t go along with your cerebrum when that organ is removed from your head; you simply lose your organ of thought in the same way as you
might lose your liver” (Olson 44). Nonetheless, Olson claims that the transplant intuition seems intuitively correct and he attempts to show that having such an intuition is compatible with the Animalist Approach to personal identity.

In order to account for the intuition, Olson adopts a Parfitian approach to the problem. There are three motivations for thinking that Prince is Brainy after the transplant operation: prudential concerns, moral concerns, and relational concerns. Olson contends, “the traditional view of the matter is that these relations of practical concern coincide both with numerical identity and with psychological continuity . . . [yet] if the Biological Approach is true, we cannot have it both ways. We can tie these practical relations to psychological continuity, or we can tie them to numerical identity; we cannot tie them to both” (Olson 71). Ergo, Olson’s suggestion is similar to Parfit’s claim that what matters in survival is not numerical identity; rather, what matters is psychological continuity. In the Prince and Brainy transplant case, according to Olson, Prince is psychologically continuous with Brainy and Prince should be concerned about the treatment of Brainy after the operation, Brainy is morally responsible for the actions of Prince before the operation, and Brainy is married to Princess and is the son of the Queen. However, Brainy is not numerically identical to Prince. Olson claims that Brainy is numerically identical to Cobbler and Brainless is numerically identical to Prince, since both Prince’s and Cobbler’s lower brain, which control the vital functions of the organism, were not transplanted (Olson 69). Olson’s solution to the Transplant Intuition relies heavily on Parfit’s claim that what matters in survival is not based on identity. Is Parfit’s thesis correct?

Noonan argues that Parfit’s conclusion, that identity is not what matters in survival, is incorrect. According to Noonan, “my concern for the fate of the person who I believe will, in some anticipated situation, be me, is a special one, and it is not simply explicable as concern for
someone who is continuous with me to a certain degree” (Noonan 170). To establish this point, Noonan considers Parfit’s teletransportation scenario. According to Parfit, a person in the future is traveling to Mars by means of a teletransportation device, which faithfully records where each particular molecule is in his body, then destroys the body, and sends the recorded information to Mars, where another machine builds a body exactly similar to the original body an hour later. After the procedure is finished, the person on Mars wakes up and is psychologically continuous with the original person. The person begins to regularly use the device and, several years later, a new teletransportation device – one that does not destroy his body after the scan has taken place – is introduced. In an hour, there will be two identical persons, one on Earth and one on Mars. However, something has gone terribly wrong with the scan and the person on Earth finds out that he will die of heart failure within a couple of days. Nonetheless, the device made an accurate copy of all the particles in his body and the person who is built on Mars will be fine. After an hour has passed, the person on Earth talks to a person – who looks exactly like him and has the same memories that he has – on Mars (Parfit 199-200). Noonan claims that in this example the original machine does not cause problems with our intuition that the person on Mars would be the closest psychological continuer. However, he argues that the second machine produces a branching effect and, in that particular case, the concern the person left on Earth has for himself is greater than the concern the person left on Earth has for his Parfitian survivor. Hence, the original person is identical to the person who is left on Earth with the bad heart (Noonan 170). If Noonan is correct, then Parfit’s claim that what matters in survival does not depend on identity is incorrect, since identity is exactly why the person left on earth has more concern for himself as compared to his Parfitian survivor. Noonan contends, “if my previous arguments are correct, then, Olson’s appeal to Parfit’s thesis is an appeal to something for which there is no good
argument and which is anyway false” (Noonan 203). In that case, the Animalist Approach implies that Cobbler should be concerned about what happens to Brainy after the transplant operation, Brainy is married to Mrs. Cobbler, and Brainy is the son of Mother Cobbler. This seems unacceptable and if Noonan is correct, which I think he is, Olson must claim that the Transplant Intuition is incorrect and defend that position.

There is also one other transplant conundrum that threatens the legitimacy of the Animalist Approach. According to Animalism and the Biological Approach, in order for person X that exists at time t* to be identical with a person Y that exists at time t1, person X’s biological life functions must be causally continuous with person Y’s biological life functions. “I have suggested,” Olson explains, “that your brainstem, as the organ that is chiefly responsible for directing your life-sustaining functions, is essentially you, for without it there is no Lockean life and no living human organism at all” (Olson 140). Olson goes on to consider three problematic brainstem transplant or replacement cases. First, a case in which the person’s brainstem is destroyed and was quickly replaced by a duplicate brainstem; second, a case where an evil demon quickly destroys the person’s brainstem and in less than a second replaces it with an identical brainstem; and last, a case in which the brainstem is slowly replaced with an inorganic machine that performs all the functions of the original brainstem. In all three cases, Olson contends that the resulting person is numerically different from the original person, even though the resulting person has an almost identical body, minus the brainstem, and is psychologically identical to the original person. What makes the resulting person numerically different from the original person, according to Olson, is that the coordination of the life sustaining functions has been disrupted in all three brainstem transplant or replacement cases. Olson claims that there is no reply to this objection and that if someone thinks that the organism does survive in any of
these cases, he or she would have to come up with a different persistence criterion for human animals (Olson 140-2). Is this an acceptable consequence of adopting Animalism or the Biological Approach?

Lynne Rudder Baker claims that this result is unacceptable and has proposed an alternative theory, the Constitutionalist View. According to Baker, in her article “Big-Tent Metaphysics,” a person should not only be able to survive the replacement of his or her brainstem, but also the replacement of most of his or her body with prosthetic devices. Baker’s alternative Constitutionalist View, which states that a person is constituted by an animal and that the life of that person has both psychological and biological features, can accommodate the removal of most of one’s body (Baker 9-12). Baker explains, “on my constitution view, there is a particular person x, such that I am identical to x, and x is constituted by a particular animal now. I am a person essentially and an animal contingently. On my view, I could never exist without being a person” (Baker 9). Ergo, even though the animal that constitutes person X in the brainstem transplant case has been destroyed and replaced with a numerically different animal, person X has survived the ordeal, since person X after the operation is psychologically continuous with person X before the operation. Baker’s Constitutionalist View is also compatible with the Transplant Intuition. Prince before the transplant operation is contingently an animal and essentially a person. The result of the transplant procedure is that there are two beings – Brainy and Brainless – and the Transplant Intuition leads us to believe that Prince should be concerned about the treatment of Brainy, Brainy is morally responsible for Prince’s actions, and Brainy is married to Princess and is also the son of the Queen. The relationship between Prince and Brainy is essential and the relationship between Prince and Brainless is contingent.
Therefore, Prince is Brainy after the transplant operation and Baker’s Constitutionalist View is compatible with the Transplant Intuition.

Olson argues that that the Constitutionalist’s approach is untenable in that it causes two problems. The first problem with the Constitutionalist’s approach is that it is hard to understand (a) how two objects that are physically identical can have different persistence conditions; for example, the person could not survive a full frontal lobotomy; yet, the animal, made of the same material, would survive the procedure, since the persistence condition for the animal are based on the continuation of the biological life of the organism and in the case of human animals, is based in the lower brainstem, and (b) in what way persons can be constituted by animals if the atoms that make up the human animals are the very same atoms that make up the person (Olson 101-2)? Secondly, Olson contends:

[The] mystery of how the animal could outlive the person is not a mystery about coincidence objects per se. It is a problem about how any two material objects, whether or not they share their matter, can be exact physical duplicates of one another and yet have different persistence conditions. And if there are coincident objects, there are also qualitatively identical noncoincident objects with different persistence conditions, neither of which constitutes the other. (Olson 102)

Olson provides an example of a machine that makes an exact physical copy of the psychological person that constitutes person A and the new person, psychological person B, is “qualitatively identical” to person A. He goes on to explain that psychological person B’s persistence conditions are different from person A’s animal persistent conditions, which is similar to person A’s psychological person persistent conditions differing from the persistent conditions of person A’s animal (Olson 102). Olson argues, “but even if the fact that [person A’s] animal constitutes [person A] can explain why [person A] and it can survive different things, it cannot explain why that animal and the duplicate person can survive different things, for [person A’s] animal does not constitute that person” (Olson 102). Hence, even though the Constitutionalist’s approach is
compatible with the Transplant Intuition, the problems that it generates are troublesome. Nonetheless, one could argue that Olson’s arguments against the Constitutionalist’s approach are unsound; however, even if the Constitutionalist’s approach is correct, and there are different persistence conditions for animals and persons, the necessary and sufficient conditions for \textit{person} A at t* to be numerical identical to \textit{person} B at t1 are psychological and therefore the Constitutionalist theorist must respond to the objections raised against the Psychological Approach.

\section*{§ 4 Results and Reevaluating the Brain Criterion}

All of the approaches discussed thus far are problematic and none appears to provide the necessary and sufficient condition for a person X that exists at time t* to be numerically similar to a person Y that exists at time t1. The Biological Approach, Olson’s Animalism, is an inadequate response to the question of numerical identity over time. As Zimmerman argues, if human animals are the only thinkers present, as Olson’s too many thinkers argument contends, then there are no such entities as human brains that can think. Yet, neuroscience and the study of psychology strongly suggest that there are human brains and that human brains are causally responsible for producing human thought. Ergo, the too many thinkers argument is erroneous and does not provide support for Olson’s claim that we are animals. Moreover, the transplant intuition provides two more compelling reason for rejecting the Biological Approach. First, if the Biological Approach is correct, then Brainy after the transplant operation is Cobbler, since the cerebrum is just another organ that is equivalent to a liver and is replaceable. Ergo, Prince should be concerned about Brainless before the procedure, Brainy will be morally responsible for the actions of Cobbler before the transplant, and Brainy will be married to Mrs. Cobbler and the son of Mother Cobbler after the operation. These consequences are unintuitive and
 unacceptable. Olson attempts to solve this problem by appealing to a Parfitian style argument, claiming that numerical identity and 'practical concerns' do not correspond. However, Noonan correctly argues that Olson's argument is successful only if Parfit's contention that what matters is not based on identity is correct. Noonan effectively shows that Parfit's reliance on psychological continuity is incorrect in the teletransportation example by contending that the person left on Earth is more concerned about himself than his Parfitian survivor and what matters does seem to be based on numerical identity. Hence, numerical identity and 'practical concerns' are closely correlated and Olson must accept the unintuitive consequences of the brain transplant example. Second, if Cobbler's lower brain, which controls the essential biological features of the animal, is transplanted onto Prince's cerebrum, which is located in Prince's body, then the resulting person, on Olson's view, is numerically identical with Cobbler. Since identity does matter in 'practical concerns,' then Prince should be concerned about what is going to happen to his lower brain before the operation, the resulting person will be responsible for Cobbler's actions, even though he has all of Prince's memories and looks like Prince, and the resulting person is married to Mrs. Cobbler and is the son of Mother Cobbler, even though he does not remember either of these people and they do not recognize him. Another problem that Biological Approach generates is that Prince would be replaced with a numerically different entity if his lower brain were slowly replaced with a prosthetic device. In that case, the resulting person would not be morally responsible for Prince's actions before the replacement procedure, since he is not identical to Prince, he would not be married to Princess (or anyone else for that matter), and would not be the son of the Queen; he would have no mother. All of these problems establish the inadequacy of the Biological Approach and it should therefore be abandoned. Should it be replaced with the Psychological Approach to numerical identity through time?
Fission cases, such as the transplant of the left and right hemispheres of the brain into different bodies or a machine that makes a copy of a person’s psychological states and uses it to produce multiple copies of the person, expose a crucial flaw with the Psychological Approach. In Parfit’s teletransportation case, the original machine that was used to transport the man from Earth to Mars made an exact copy of the man, destroyed the man as he existed on Earth, and another machine on Mars took the information that was sent from Earth to recompose a material being that was psychologically continuous with the original man. Suppose that the first machine used in Parfit’s example made a copy of Prince on Earth, destroyed Prince’s body and sent the information containing the specifications of Prince to Mars, and the machine on Mars took the information and recomposed two people who were exactly psychologically continuous with the original Prince. In this case there is no closest continuer, since the first machine destroyed the original body. Which of the two men on Mars is morally responsible for Prince’s actions on earth? More troubling, is Princess married to one of the men? Determining which one was in fact her husband would certainly be based on an arbitrary decision, since they are both psychologically identical to Prince. Or is Princess married to both men? Then the machine has made the Princess a bigamist! Another problem associated with Parfit’s teletransportation machine is that the second machine makes a copy of the original man, say Prince, sends the information to Mars where the machine there faithfully uses materials to make the Mars Prince, but does not destroy the Original Prince on Earth. However, the machine on Earth malfunctioned and the Original Prince will die of heart failure in a few days. Noonan argued that the Original Prince was more concerned for his own well being, since Original Prince is the closest psychological continuer (Noonan 169). Yet, what makes Original Prince the closest psychological continuer? A compelling response to this question is that Original Prince’s
psychological states have been continually preserved in his brain and that in order to determine if an individual is the closest psychological continuer, biological continuity of the brain needs to be taken into account. Accordingly, a General Criterion of personal identity must account for the substance that provides the basis from which the psychological features that are important for personhood are produced, either material in the case of humans and aliens or nonmaterial in the case of angels.¹ General Criterion: for person X at time t* to be numerically identical to person Y at time t1, person X’s memories, intentions, and beliefs at time t* must be both strongly connected and continuous in the right causal way with the memories, intentions, and beliefs of person Y, and both person X and person Y must generate these psychological features by means of substance S. In humans, substance S is the human brain. Hence, a reevaluation of the Brain Criterion is warranted.

According to the Brain Criterion, or what Parfit calls the Physical Criterion, the necessary and sufficient condition for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1 is that person X’s brain, or enough of X’s brain, is related to person Y’s brain at time t1. What makes the Brain Criterion appealing is that the brain is the single human organ that is clearly causally responsible for producing the psychological features that we typically associate with personhood. However, many philosophers reject the Brain Criterion in favor of the Psychological Approach. One of the most influential arguments for abandoning the Brain Criterion is Bernard Williams’s brain state transfer device argument. In that thought experiment, the brain state transfer device is used to accurately record the psychological states of person A, then person A’s psychological states are either transferred to a new brain or person A’s brain is wiped clean and the psychological states are reinstated in person

¹ The idea of introducing a General Criterion for personal identity that incorporates a substance clause was suggested by Michael Tooley in “Comments on Justin Kuster’s Draft of his Honors Thesis, ‘Numerical Identity Over Time’” February 9th 2011.
A’s brain. After the procedure has been performed, person A is psychologically continuous with the resulting person who has either a new brain or the same brain. Ergo, the physical continuity of the brain is not sufficient condition for psychological continuity or numerical identity (Williams 79-80).

One way to respond to Williams’s argument is to show that the brain state transfer device would not produce a numerically identical person. In order for Williams’s brain state transfer device to accurately reproduce the mental life of the individual that it was used on, the device would need to record more than just the location of and connection between the multitude of neurons contained within the individual’s brain. It would also need to accurately record the functional state of the entire neural system that produces the fundamental psychological features associated with that unique person. Suppose that before the procedure is performed on person A, she goes out on the town and indulges in multiple alcoholic libations and becomes intoxicated. The functional state of her brain after this binge is dramatically different from the functional state of her sober brain. She arrives at the doctor’s office and Williams’s device accurately records the position of and connection between her neurons and also records how the brain functions overall. Next, the information that the brain state transfer device has recorded is faithfully reproduced in another brain and person A’s brain is destroyed. Is the new person, person B, identical with person A? Even though person A and person B share some psychological traits, person B is not identical with person A. Person B’s functional state is identical to person A’s inebriated functional state without the presence of alcohol in person B’s system. In other words, person B is in a drunken state without being intoxicated and she will therefore remain in that inebriated functional state and never sober up. What if the doctors noticed that person A was drunk when she arrived at their office and they decide to permeate
person B’s body and brain with an equivalent amount of alcohol to compensate for the amount of alcohol that person A drank before the procedure? This would have no effect on the copied brain state. Eventually, the alcohol that was introduced into person B’s body and brain would be removed by her liver; yet, person B would continue to act like an inebriated person A, since Williams’s device has imparted person A’s inebriated functional state in person B’s brain and the functional state itself will never sober up. This counter-example would also work for other types of mental states that are physically realized in the brain; for example, pain and the firing of C fibers associated with certain neural states. Hence, Williams’s brain state transfer device does not produce identical people and therefore Williams’s argument does not refute the Brain Criterion.

Another argument against the Brain Criterion is based on the fission transplant case. Both hemispheres of the brain are capable of independently maintaining the particular psychological states that are closely associated with personhood. In the classic fission transplant example, person A’s brain is removed from person A’s body, the left hemisphere is placed in body B which produces Lefty, and the right hemisphere is place in body C which produces Righty. Is person A after the fission transplant operation Lefty or Righty? There are three possible answers to this conundrum. First, person A is neither Lefty nor Righty; person A no longer exists. If the Brain Criterion is correct, this answer is unacceptable. Person A’s brain still exists, even though it is in two locations, and person A’s separated brain is still functional; Lefty believes that she is person A and Righty believes that she is person A. This leads to the second possible answer, either Lefty is identical to person A or Righty is identical to person A, but not both. This answer is also unacceptable for the Brain Criterion theorist. Any factor that could be used to determine which person, Lefty or Righty, is person A would be completely arbitrary. We
could decide that Lefty is person A on even numbered days of the month and Righty is person A on odd numbered days of the month. This absurd standard is just as good as any other standard, since according to the Brain Criterion, both Lefty and Righty have equal claim to being person A. Lastly, one could claim that Lefty and Righty are both person A. This is the option that the Brain Criterion theorist must embrace. Yet, how can one person propagate two persons that are each identical to the original person?

It is impossible for one person to result in two persons that are identical to the original person; therefore the only response that is available to the Brain Criterion theorist is that there are two persons present before the fission transplant operation. Yet, there appears to be only one person present before the fission transplant, so how can this be? One possible solution that accounts for the illusion of a single person is Noonan’s three-person model: there is a Lefty person, a Righty person, and a third person that is the unification of both Lefty and Righty. After the fission transplant, the third person ceases to exist and Lefty and Righty go their separate ways. However, this causes a logical problem. If the unified person stated that she was going to visit London before the operation and only Lefty made it to London, then the third person said something that is both true and false and Righty would have been saying something that is false. Another option is to say that there are two persons present before the operation and that we do not notice that there are two persons present because of the extreme connectedness of the two persons by means of the corpus callosum, which produces a single consciousness. Both of the cerebral hemispheres of the human brain are capable of being a Lockean person (i.e. a thinking, rational and self reflexive being) independent of one another. If one of the cerebral hemispheres is damaged and becomes inoperable, then the individual has trouble maintaining certain functions – that is until the functioning cerebral hemisphere adapts to the change and takes over
the functions of the damaged hemisphere. Ergo, each cerebral hemisphere of the brain is a functioning person in a normal brain; however, due to the extreme connectedness of the cerebral hemispheres in a normal human brain, via the corpus callosum, they collectively constitute a single consciousness. Think of the brain as a combination of dual processors that are recording and accessing information from dual memory banks. Each cerebral hemisphere is associated with a single processor and memory bank, so when a person either stores or retrieves information from a region of memory, each processor performs a particular task. The effect of both hemisphere processors working concurrently generates a single consciousness that produces the illusion of there being one person present. This ‘illusion’ is similar to the illusion of a single, continuous moving image produced in films. A film is made up of thousands of still pictures or frames and when those pictures are flashed at the appropriate frame rate, they produce the illusion of a single continuous moving picture. Likewise, the brain’s cerebral hemispheres share information with one another at such a fast rate of speed that it produces the illusion of there being one person present when there are really two persons present. Therefore, it seems likely that each person is actually made up of two persons so closely connected that they generate a single consciousness and are therefore indistinguishable from one another.

This approach avoids the logical problem that the classical psychological theorist faces in fission cases. Suppose that an individual is composed of both person A and person B [individual A/B], who undergoes a fission transplant operation. After the fission transplant operation, person A goes to New York to study philosophy and person B goes to China to study kung fu. With two separate people composing the single individual before the fission operation, the transitivity relationship – which is problematic for the standard Psychological Approach – is side-stepped; individual A/B is composed of both person A and person B at time t1, person A
person B, and after the fission procedure at time t*, person A at time t* = person A at time t1, person B at time t* = person B at time t1, and (person A ⊢ person B at time t*) = (person A ⊢ person B at time t1). The modified Brain Criterion also eludes the logical problem that Noonan’s tripartite person theory faces. For example, person A thinks about going to London and her left hemisphere records that memory in a place that only it can access. After the fission transplant operation, Lefty accesses that memory and goes to London and Righty stays home. Righty had nothing to do with the thought ‘I am going to go to London’ nor did Righty record that thought in a place that it could access; ergo, Righty did not say something that was false. Furthermore, suppose that Prince has gone through a fission transplant procedure and is now Lefty and Righty. If the modified brain criterion is correct, then Prince should be prudentially concerned about the treatment of both Lefty and Righty before the operation. After the operation, Lefty alone, Righty alone, or both Lefty and Righty will be morally accountable for the actions of Prince’s before the procedure. The only way to ascertain who is accountable for Prince’s actions is to determine whether Lefty alone was causally responsible for the action, in which case Lefty would be held accountable, or Righty alone was causally responsible for the action, in which case Righty would be held accountable. If both Lefty and Righty were causally responsible for the action, which seems like the most plausible answer given the extreme connectedness of Lefty and Righty before the operation, then both should be held morally accountable. After the operation, Queen is the mother of both Lefty and Righty, and Princess is married to both Lefty and Righty. This might seem strange; however, if the Brain Criterion is correct, before the operation Queen was the mother of Lefty and Righty, and Princess was married to Lefty and Righty. Ergo, the only change that has taken place after the operation is that Prince has become spatially separated and now exists as Lefty and Righty. Although this
would be an awkward situation for both the Queen and the Princess at first, the Queen and the Princess would soon realize after talking with Lefty and Righty that both are psychologically continuous with Prince.

Another objection to the Brain Criterion is that there could be other types of persons that do not require human brains to be persons. Noonan argues that when philosophers talk about personal identity they are using the term ‘person’ in a Lockean sense; a rational thinking being that can consider itself in its thoughts. He appeals to Locke’s example of the intelligent parrot, which is a person but is not a man, and contends that if there could be such a person, then there could be other persons that do not have physical brains (Noonan 8). Noonan claims, “consequently, unless one abandons the demand for a criterion of identity over time for persons as such, and settles for the view that there are different criteria for different kinds of persons (human persons, parrot persons, extra-terrestrial persons and so on) one must reject the Physical Criterion [Brain Criterion] of personal identity even [for] . . . human persons” (Noonan 8-9).

First, there is the General Criterion that accounts for all persons by means of identity relation between psychological features as well as identity relation between some substance S – whether material or immaterial – that generates those psychological features. Second, typically the question of numerical identity through time is a question about the necessary and sufficient conditions for human persons to persist through time, not a question about the persistent conditions for parrot persons or angelic persons. How could we know what the necessary and sufficient conditions are for a nonphysical angelic person or some alien person to persist through time? Furthermore, Olson argues that the term ‘person’ could be either a substance concept, which denotes what a human being fundamentally is, or a phase sortal, which denotes a temporary phase or feature that is only one part of the individual’s whole career (Olson 27-9).
Olson contends, “. . . anyone who assumes that ‘person’ is a substance concept is in effect assuming the Psychological Approach . . . [but] our substance concept – what we most fundamentally are – is not person, but Homo sapiens or animal or living organism (Olson 29-30). The Brain Criterion theorist could appropriate Olson’s substance/phase sortal concept distinction, claim that our substance concept, what human beings most fundamentally are, is Homo sapiens, and that our defining feature is our ability to think, which takes place in the human brain. Hence, Noonan’s argument against the Brain Criterion is based on ‘person’ being a substance concept, which presupposes the psychological approach, and is therefore unsound.

The Brain Criterion partially avoids Olson’s fetus argument that he uses to challenge the Psychological Approach. In “What Are We? A Study in Personal Ontology,” Olson explains that scientists have discovered that the human brain is one of the first structures to develop and that it has no mental capacities or any interesting psychological features when it first develops (Olson “What Are We?” 85). Nonetheless, the main reason for adopting the Brain Criterion was that the brain is the physical location of our psychological features and starting our careers as fetuses that lack any psychological features seems incompatible with the initial intuition. Therefore it cannot be the case that a person is identical to the early stage fetus from which he or she developed. Rather, the person is identical to his or her late stage fetus that has developed its functioning cerebral cortex, which generates the rudimentary psychological features that provide the initial infrastructure upon which the sophisticated psychological features associated with personhood (such as rational thought) are developed. Furthermore, if the Brain Criterion is accepted on the basis of the intuition that the brain is the seat of the psychological features, then a person does not have the potential of ever becoming a human vegetable. As soon as the cerebrum ceases to function, the person ceases to exist. This is an acceptable consequence, since
the psychological person does not exist as a human vegetable; rather, a debilitated human body continues to persist by being force fed food. Hence, the psychological person who was at one time realized in the active brain of the individual no longer exists and a person can never become a human vegetable. Yet, we often refer to human vegetables as if they were still persons; such as “John was in a horrible accident and he is brain dead.” Does this mean that we acknowledge that the person is the human vegetable? The answer is no. We use the name of the expired person when referring to the human vegetable simply as a result of not having the correct terminology to refer to psychologically lifeless body that at one point in time constituted a person. Therefore, the Brain Criterion should be revised to incorporate these intuitions. Here is the Modified Brain Criterion: the necessary and sufficient condition for a person X that exists at time $t^*$ to be numerically identical to a person Y that exists at time $t_1$ is that person X has an operative cerebral hemisphere that produces either X’s memories, intentions, and beliefs or X’s rudimentary psychological features at time $t^*$ that are both strongly connected to and continuous with either the memories, intentions, and beliefs or the rudimentary psychological features produced in person Y’s operative cerebral hemisphere at time $t_1$. This formulation of the Brain Criterion more accurately recognizes our intuitions that a rational person begins his or her career as a late stage fetus and ceases to exist once both of his or her operative cerebral hemispheres are destroyed.

Which approach to personal identity is correct? I have tried to defend and modify the Brain Criterion in order to respond to the various objections to that approach. The Modified Brain Criterion avoids many of the problems that plague both the Psychological Approach and the Biological Approach. Olson’s main argument against the Psychological Approach is that it does not take into account a person beginning his or her career as a fetus. Animalism, or the
Biological Approach, is discordant with our intuitions concerning brain transplants and the transplant, or replacement of, the lower brain stem. The Modified Brain Criterion accounts for a person beginning his or her career as a fetus and is in accordance with the Transplant Intuition. Furthermore, according to Nagel, “. . . the brain is the only part of me whose destruction I could not possibly survive. The brain, but not the rest of the animal, is essential to the self” (Nagel 206). Many of us share Nagel’s intuition. This is based on the scientific fact that the brain on its own contains the most important neurological and psychological features that make us who we are and the loss of our most important organ equates to the loss of the person. Therefore, given Olson’s assumptions, the Modified Brain Criterion is the most advantageous approach to the question of numerical identity through time.

**Conclusion**

In this paper I have presented the various approaches to the question of numerical identity through time: what are the necessary and sufficient conditions for a person X that exists at time t* to be numerically identical to a person Y that exists at time t1? First, I provided the five assumptions that Olson utilizes. Olson assumes that there is an answer to the question, materialism is true, there are such things as persons, we can distinguish numerical identity over time, and that persons are not composed of temporal parts. Next, I provided arguments for and objections to the four most prominent approaches to the question of numerical identity that are in concordance with Olson’s five assumptions. I began in § 1 with the Psychological Approach, which claims that the necessary and sufficient persistent condition for a person is psychological continuity. The Psychological Approach is based on our transplant intuitions; however, fission transplant cases are problematic for the Psychological Approach and according to Olson, the Psychological Approach does not provide an account of a person beginning his or her career as a
fetus. In § 2, I explicated the arguments for and against the Bodily Criterion, which claims that the necessary and sufficient persistence condition for persons is body continuity, and the Brain Criterion (Physical Criterion), which claims that brain continuity is the necessary and sufficient persistence condition. The Bodily Criterion correctly accounts for a human being beginning his or her career as a fetus; yet, it is discordant with the transplant intuition and it is unclear how many parts of a person’s body can be lost before the resulting person is no longer identical to the original person. The latter concern, along with the importance of the psychological aspects of human beings, leads to Brain Criterion. The Brain Criterion correctly accounts for a person beginning his or her career as a fetus and is in accordance with the Transplant Intuition; however, Williams’s brain state transfer device argument contends that sameness of brain is not necessary and the Brain Criterion does not account for other types of persons; for example, alien persons who do not have brains, but have some other physical structure that produces their psychological features. In § 3, I provide Olson’s Biological Approach, or Animalism, which claims that the continuation of the biological life of the organism is the necessary and sufficient condition for numerical identity through time. The Biological Approach correctly accounts for a person starting out as a fetus and the potential that a person could end up a human vegetable. Nonetheless, the Biological Approach does not accord with the Transplant Intuition, for either the transplant of the cerebrum or transplant of the lower brain, and Olson’s too many thinkers argument entails that there are no thinking brains, which is unacceptable. Lastly, I argued that both the Biological Approach and the Psychological Approach are inadequate responses to the question of numerical identity through time. I then reevaluated the Brain Criterion by responding to the various objections to that position. I argued that Williams’s brain state transfer device creates a new person; that a single person is comprised of two persons that each
independently act like a processor and due to the extreme connectedness of the two persons (via the corpus callosum), the two persons produce a single consciousness which leads to the illusion of a single person; that we are concerned about the persistence conditions for human persons and that the term ‘person’ is not substance concept but is rather a phase sortal; and lastly I explained how the Modified Brain Criterion, which is dependent on the psychological features of persons, is compatible with persons beginning their careers as late stage fetuses, but is incompatible with a person ending up as a human vegetable. Given Olson’s assumptions, I ultimately concluded that the Modified Brain Criterion is the most defensible approach to the question of numerical identity through time.

Works Cited


