Do Dead Bodies Pose a Problem for Biological Approaches to Personal Identity?

1. Introductory Sketch of the Dead Body Problem

One reason why the Biological Approach to personal identity is attractive is that it doesn't make its advocates deny that they were each once a mindless fetus.[1] According to the Biological Approach, we are essentially organisms and exist as long as certain life processes continue. Since the Psychological Account of personal identity posits some mental traits as essential to our persistence, not only does it follow that we could not survive in a permanently vegetative state or irreversible coma, but it would appear that none of us was ever a mindless fetus. But what happens to the organism that was a mindless fetus when the *person* arrives on the scene?[2] Can the acquisition of thought destroy an organism? That would certainly be news to biologists. Does one organism cease to exist with the emergence of thought and another organism, one identical to the person, take its place? (Burke,1994) That doesn't seem much more plausible than the previous move. Should identity and Leibniz's law be relativized to a time so that two things can be identical at one time and not another? (Myro, 1985) That is certainly an unwelcome move. Should an asymmetry be defended because the fetus has the potential to develop a mind and the irreversibly noncognitive do not? That is, should it be argued that a person is identical to a mindless fetus but could never exist in a permanent vegetative state or irreversible coma? This strategy is not promising because it will violate the transitivity of identity for the mindless fetus surely is the same organism as that in the irreversible coma, yet the latter is not identical with the person. So it would appear that advocates of the Psychological Approach to personal identity must accept that when the person comes into existence, it shares all its matter with a spatially coincident, but distinct and preexisting organism.

Many philosophers find spatially coincident entities to be quite problematic.[3] One much discussed problem is that if the person can think, then it should follow that the spatially coincident organism can also. This means that there are two thinking beings where we would like there to be

only one. Part of the appeal of the Biological Account of personal identity is that it claims that there is only one entity where psychological accounts are forced to admit two. Each of us is essentially an organism that was once a mindless fetus and then, with the onset of certain mental capabilities, we each become a person for a stage - hopefully a long one. 'Person' is a phase sortal, not a substance sortal.[4] Since the person is the organism - the term 'person' referring to the organism in virtue of a psychological property that is not essential to it - there isn't a problem of two spatially coincident thinking substances.

Some of the better known advocates of the Biological Approach to personal identity like Peter van Inwagen (1991, pp.146-49) and Eric Olson (1997, pp.111-19) maintain that the organism ceases to exist at death - or soon afterwards when even just slight decay makes it impossible for the organism to be revived. Fred Feldman (1992, 2000) and David Mackie (1999) label this the 'Termination Thesis' so that they have a name for the doctrine that they vigorously attack. And they are not alone in believing that the organism or body survives death and continues to exist then as a dead organism or body even after decay has made reviving the creature impossible in principle. William .R. Carter (1999, pp. 167-171) and Lynne Rudder Baker (2000, p. 207) also identify the organism and the body and believe it survives death as a corpse. Sydney Shoemaker is willing to grant Olson that the organism ceases to exist at death, but he maintains the body persists as a corpse (1999, pp. 497, 503).[5] Shoemaker maintains that before death, the body and organism were distinct but spatially coincident entities (1999, p. 499-500). Since Shoemaker doesn't identify the organism and the body, we may have to speak of two termination theses.[6] There will be the *Body Termination Thesis* which Shoemaker would join Baker, Feldman, Carter and Mackie in rejecting, and there will be an *Organism Termination Thesis* which Shoemaker alone would accept.

Shoemaker (1963, pp. 14-15) also differs from Mackie, Carter and Feldman in that he believes that we are essentially persons (1963, pp. 14-15). Baker would side with Shoemaker on this issue. According to them, we cease to exist when our psychology is extinguished – or more precisely when certain mental capacities are lost.[7] Shoemaker would endorse Baker's claim 'My dead body would not be (nor would it constitute) me' (Baker 2000, p. 120). Carter (1999) and Mackie (1999) would endorse the contrary claim of Feldman:

> I think I am my body. I think I formerly was a fetus. I think someday that I will be dead - just a corpse. When I refer to myself - I mean to be referring to this human body - the one that is writing this essay (Feldman 2000, p. 111).

What all five critics of the *Body Termination Thesis* have in common is a belief that Olson, van Inwagen and their supporters will be confronted by an analogue of the same sort of problem that the fetus posed for the psychological accounts of identity. Instead of a fetus problem, the Biological Approach to personal identity has a 'dead body' problem.[8] This is because Olson - and van Inwagen with some minor qualifications - insist that the organism ceases to exist at death and that there is no such entity as a dead body. They maintain that what people have been calling a 'dead body' or a 'corpse' is really just the remains of the organism and these remains do not compose anything that is identical to any organism which was earlier alive. If van Inwagen and Olson are right to claim that there are no spatially coincident entities and that the organism ceases to exist at death, but are wrong to assert that there is no such thing as a dead body, then this would mean that a brand new entity, a corpse must 'pop' into existence at the moment of the organism's death. Shoemaker, Baker, Carter, Mackie and Feldman find this absurd.[9] They, like most philosophers and virtually all lay people, believe it is just obvious that there are such things as bodies that once were alive and then will persist in a dead state unless they end up cremated or blown to bits. So if the organism ceases to

exist at death, but the dead body is a real entity that didn't just pop into existence, then before the death of the organism, the body and the organism were spatially coincident. Thus all the problems that spatial coincidence posed for the Psychological Aaccount of identity will return in slightly different form for the Biological Account of identity.[10]

If philosophers hold that the body which is a corpse was earlier alive and want to avoid positing that the organism is distinct but spatially coincident from the body, they can endorse either of two positions whose differences are rather insignificant for the purposes of this paper. One approach would be to identify the body and the organism as Mackie and Carter do and speak of a dead organism. 'Human Organism' and 'Human Body' would be two equivalent names of the same substance sortal. The other position would be that of the Bodily Approach to personal identity. This account maintains that we are essentially bodies and only contingently organisms (i.e. a living entity). The body is an organism when it is alive, but 'organism' is a phase sortal. That means the property of being an organism doesn't determine the body's persistence conditions. The Bodily Approach will allow a body to cease to be an organism without ceasing to exist, much as everyone thinks an individual can cease to be a student without ceasing to exist. Both approaches posit the existence of dead bodies. They also share a belief that that 'organism' and 'body' refer to one and the same entity. The Bodily Approach though differs in that it doesn't ascribe to the dead body the property of being an organism for it maintains that a body possesses such a property only when it is alive.

Olson is aware of how radical and strange his denial of the existence of the dead body will sound to most people. He offers a lengthy defense and some good arguments for the position (1997, pp. 142-53). His target is the claim that there exists a being that is alive and then later continues to exist in a dead state. He is not opposed to someone identifying the body and the organism as long as

this body/organism goes out of existence at death, i.e., it has the persistence conditions of a living being. I also am not opposed to someone identifying the organism and the body in the way that Olson suggests. But I am a little more skeptical than Olson about the prospects for success of his suggested identification because it may distort what most people mean by 'body.' We shall later encounter a description of whole brain transplants which provides some reason for people not to identify the human body and the human organism. More importantly, since most people believe the living body can become a dead body, they may think that Olson's suggested revision of 'body' amounts to an unacceptable conceptual gerrymandering. Such people may insist that if there are bodies, then they survive death. While I have no strong objection to their maintaining that the term 'body' is meant to cover corpses that were earlier alive, my position would then be to deny the existence of any such body. That is, there would not exist anything that satisfies their informal criterion for being a body. My concern in this essay is to deny that there is a living entity that continues to exist after its death. I am not very interested in whether we can reconceive the body as existing only when alive.

I don't think that the critics of the termination theses have done justice to Olson's arguments against the existence of a dead organism or body. Nor do they give an account of the body that can answer van Inwagen's special composition question: 'What is it that makes the Xs compose a Y?' (1991, pp. 67-71) While I shall briefly present some of van Inwagen and Olson's doubts about the body, most of the second half of this paper will be given over to my own ideas concerning why we do not have a good reason to believe that there is any such thing as a dead body. But first I will explore why philosophers find the termination theses so counterintuitive and claim that Olson and other defenders of the view that our destruction and our death are simultaneous will have to tolerate the existence of spatially coincident organisms or bodies. The

second part of this paper will begin with a response to these charges.

PART I

DEFENDING THE EXISTENCE OF DEAD BODIES AND DEAD ORGANISMS

2. Commonsense Ontology and Customary Linguistic Practice

Feldman uses the example of Aunt Ethel to show that the termination theses runs afoul of commonsense. When Aunt Ethel dies, her relatives make arrangements to bury *her*. This implies that she still exists. But it isn't just to accounts of Aunt Ethel that Feldman appeals to deny the termination theses. He gives example after example of how commonsense and customary usage indicates an adherence to a metaphysical position which supports his own view and runs counter to the termination theses (1992, pp.94-95; 2000, pp.101-03). He mentions that he once ate a fish in a restaurant that the proprietor advertised had slept the previous night in the Chesapeake Bay. He points out that the owner of a horse that collapses and dies in the street cannot leave the corpse in the street on the grounds that the horse he owned no longer exists. He insists that school children dissect frogs that were earlier alive. He claims that the dead elm tree in his backyard was once alive. Feldman adds, and Mackie seconds the view, that what is true of organisms such as trees is also true of organisms that are human beings (Mackie 1999, p.234).

3. Studying the Dead in Order to Obtain Knowledge of the Living

If corpses are bodies that were *never* once alive, how is that researchers could obtain knowledge about the living from studying the nonliving? Feldman (1992, p.119), Carter (1999, p. 169) and Mackie (2000, p.234) all wonder what an autopsy could tell the coroner if the body he studies wasn't once alive. If the corpse had never been a living entity, there would be no point in trying to determine its cause of death. In order to die, something must have once been alive. And it

seems that the cause of death of one entity can't be obtained from studying the body of another. Leaving human coroners aside, what could the intellectually curious taxidermist hope to learn from studying bodies that were never alive nor presently belong to the species that he is interested in learning something about? If the termination theses were true, what would it mean to say that the butterflies mounted behind a clear glass window were 'well-preserved specimens?' It couldn't mean that they preserve the structures that a living butterfly *once* had. So the termination theses are at odds with the taxidermist's self-understanding and epistemological pursuits. Mackie expresses the taxidermist's point of view when he claims that: 'It is reasonable to suggest that it is precisely because these are butterflies that it is possible to learn about butterflies by studying such collections' (1999, p.234).

4. Entities Popping In and Out of Existence

The four critics of the *Organism Termination Thesis* think that it is absurd to maintain that the organism ceases to exist with death.[11] Baker speaks for the group when she comments that: 'Olson's view makes a mystery of what a corpse is, how it came into being, and what happened to the animal that died' (2000, pp.226-27). While Baker believes that the person ceases to exist at death or with the loss of the capacity for self-consciousness if that comes first, she and the other three critics don't believe that the organism disappears with death, but instead that it becomes a dead organism. If the organism did cease to exist at death, and there are no spatially coincident entities as Olson claims, then a dead body would have to pop into existence with the death of the organism for surely there is a dead body located where an organism just died. The critics of the *Body Termination Thesis* find the prospect of this very hard to believe. Three of the five - Carter, Mackie and Feldman – believe that not only does the organic body survive death, but since it is identical to the person, there will be found dead persons in hospitals, morgues and graves. A typical expression of such

surprised disbelief can be found in the following remarks of Feldman:

> Surely in every case in which a 150 pound person dies and leaves a 150 pound corpse, there are plenty of obvious reasons to suppose that a certain 150 pound object persists through the change from being alive to being dead...suppose a terminally ill 150-pound person is resting on a sensitive scale when he dies. Suppose he dies peacefully, so that the needle of the scale does not move. It pointed to '150' before he died, and it continued to point to '150' when and after he died. It did not even quiver at the moment of death. It would have been hard to remove a person and replace him with an equally heavy corpse. It would have been nearly impossible to do this without causing the needle on the scale to move. Since the needle did not move, there is at least some prima facie reason to suppose that some 150-pound object persisted through the change (2000, p. 105).

5. The Non-Functioning Artifact Analogy

Organisms, as well as artifacts, are complex entities. Consider a watch with its intricate design. The watch's parts are in a state of reciprocal dependence as are those of an organism. The watch's parts cooperate in order to facilitate its time keeping functions, while the organism's parts are united to serve the end of life preservation. But it is generally assumed that a watch doesn't cease to exist when it can no longer function. If enough of its parts are still intact, it survives as broken watch. Mackie believes that the existence of non-functioning (defective) artifacts can offer some support for his claim that non-functioning (dead) bodies exist. After pointing out a comparison that Locke draws between organisms and watches, Mackie suggests that we say about organisms what we do about broken watches - they still exist, they just don't function (1999, pp. 237-38). Mackie explains that 'the obvious alternative (to the Termination Thesis) is to suggest that the persistence of biological organisms depend upon their retaining enough of the organization of parts that is the

product of their natural biological development, and that makes them apt for life, while stopping short of saying that life is necessary'(1999, p.236).

PART II.

DENYING THE EXISTENCE OF DEAD BODIES AND DEAD ORGANISMS

6. What Exactly Does Commonsense and Customary Linguistic Practice Show?

Do the termination theses fly in the face of common sense? Let's return to the case of Aunt Ethel. Her family gets a phone call to rush to the hospital. In the Intensive Care Unit, after repeated tests have confirmed no brain life, a relative says 'Aunt Ethel is gone.' The respirator is removed and the machine-induced breathing ceases in what the relative and doctors considered a 'ventilated corpse.' Everyone in the family now assents to the earlier claim that Aunt Ethel is not present. They are looking not at Aunt Ethel but her body or remains. Or at least that is how many people would describe the case. And in this section, I am merely exploring commonsense attitudes to identity.

Most lay people believe in the existence of the soul. So even if they think that Aunt Ethel's body still exists in a brain dead state, they are more likely to believe that she will be found in Heaven rather than exist as a dead person in a grave. So commonsense doesn't seem so obviously on the side of Feldman, Carter and Mackie. Maybe there is not a *single* commonsense. Or perhaps there is just not a commonsense view of when we cease to exist.[12] Even if there were, I think we have reason to be suspicious of any such view. We shouldn't let our metaphysics be driven by pre-theoretical intuitions even if linguistic practices reveal them to be widely shared by laypeople. When exploring the metaphysics of individual objects we should place less emphasis on folk ontology and linguistic intuitions and more on other matters such as: answering van Inwagen's special composition question; avoiding disjunctive persistence conditions; determining which positions are compatible with the best science of the day; discovering what views will make us abandon core

philosophical beliefs like supervenience or the closure of the physical; and investigating whether a theory will give rise to more mereological puzzles than its competitors. Then we should weight the costs against the benefits. While I don't think intuitions can be left out of the mix, pre-theoretical intuitions and their expression in customary linguistic usage should not be given too much weight.

7. Obtaining Knowledge from the *Remains* of the Dead

Feldman writes: 'If we want to investigate the anatomy peculiar to a certain species, surely it would be natural to dissect a dead member of that species.' He finds the consequences of the termination theses quite puzzling, as do Carter and Mackie, for 'if the dead objects were not a member of that species, how could dissecting it give us knowledge about that species?' (Feldman 1992, p.119) However, if we substitute 'the *remains* of an organism of that species' for 'a dead member of that species' in the first of the two quotes, we can then meet the epistemological objections posed in the second. We wouldn't be perplexed by questions about what is it that coroners acquire knowledge from and what is it that the collector of butterflies collects. It is not at all strange to hear that the former studies *remains* and the latter collects them. In fact, there is an abundance of counterexamples to the claim that knowledge of a species can only come from studying individual members of the species. Just consider all the truths that can be gleaned from footprints, artifacts, nests, feather, stools, and blood samples of the species in question. They tell us a great deal about an organism that they are not identical to. So, likewise, gaining knowledge from studying what is called a 'corpse' doesn't necessitate that the corpse once had to be a living organism. It isn't even necessary that the corpse be considered a genuine substance rather than just the remains of one.

8. Why Dead Bodies (Corpses) Don't Pop into existence

I first want to note that at least Baker and Shoemaker shouldn't be that surprised that

something can die and cease to exist at the same time, i.e., not remain as a dead entity of its kind. For this is surely what they believe about persons. There is literally no such thing as a dead person for them. Baker writes 'if something ceases to be a person, it ceases to be' (1999, p. 157) and 'my dead body would not be (nor would it constitute) me' (2000, p. 120). Since Shoemaker and Baker believe that a person is essentially a thinking being that ceases to exist when it loses its capacity for sentience, why do they resist the claim that an organism is essentially a living being and therefore cannot exist when it is dead?

The 'answer' is that Shoemaker and Baker believe it is just too farfetched to claim that there is no composite object where the living person used to be. It is one thing to say that there is not a dead person at the scene, that they can accept; but it is quite another thing to claim that a dead body is not there either. Most people, at least those not infected by certain strands of philosophy, can clearly see what they judge to be a fresh corpse. However, the sting of this charge can be alleviated if it is kept in mind that Olson and van Inwagen don't deny that there are any physical things where the organism just expired, they just deny that such physical matter composes an individual or substance. What is called a 'corpse' is a *mere* plurality of things that no more compose a genuine individual than do my hat, jacket and backpack when they lie in contact with one another on my coffee table.

If we adopt the policy of substituting the phrase 'remains of an organism' for 'corpse' or 'dead body,' then it no longer seems so bizarre to say that an organism ceases to exist at death. Nor would it be a surprise that the scale in Feldman's early example indicates the same weight before and after death. Why shouldn't the remains weigh the same as the living person or organism? We would not be at all surprised if the remains of a house weighed as much as the house did. Of course, the remains of the house don't look much like the earlier house, while the fresh remains of the

organism do look like the organism. But *outer appearances* can be misleading. The following quote from Olson makes this point well. Organisms are essentially alive and cease to exist, outer appearances to the contrary, when they die:

> 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 sudden end, and the chemical machinery begins immediately to decay. If it looks like there isn't all that much difference between a living animal and a fresh corpse, that is because the most striking changes take place at the microscopic level and below. Think of it this way: if there is such a thing as your body, it must cease to exist at *some* point (or during some vague period) between now and a million years from now, when there will be nothing left of you but dust. The most salient and dramatic change that takes place during that history would seem to be your death. Everything that happens between death and dust (assuming that your remains rest peacefully) is only slow, gradual decay (1997, pp.151-52).

9. Why the Non-Functioning Artifact Analogy Doesn't Work

Mackie claimed that just as a broken watch is still a watch, so a dead organism is still an organism. I think we should be suspicious of analogies between organisms and artifacts - at least when a claim about artifacts is offered to reinforce an ontological position concerning organisms. An artifact does not possess the 'respectable ontological status' of the organism and thus the former shouldn't be used to resolve some contested issue regarding the latter. There is a long tradition going back to Aristotle in which the paradigmatic substances are organisms while artifacts are considered pseudo substances. One key difference is that an organism is responsible

for the unity of its own parts. It has the internal casual power to maintain as well as replace its parts. An artifact lacks that internal cohesion. Hence it is much more difficult to determine what bits of matter compose an artifact and which are foreign to it.

There are other reasons why we should be wary of drawing inferences about the persistence conditions of organisms from the persistence conditions of artifacts. An artifact could exist defective from the start, thus unable to ever perform the function for which it was designed. Could an organism exist without ever being alive? Would Dr. Frankenstein's creature be classified as an organism before the switch had been thrown releasing the energy that animated it? If you are tempted to say 'yes,' keep in mind that the switch may never have been flipped and thus you would be committed to designating the creature as an organism even though it never lived. Another telling difference between organisms and artifacts is that the latter are widely believed to be able to exist as scattered objects. The classic example is of the watch's parts spread out across the repairman's work table. But an organism cannot exist in a scattered form. An organism that is chopped into pieces no more exists than one that has been cremated. Why doesn't it exist any longer? The answer is that there aren't any vital life processes continuing. Moreover, as long as there are such continuous life processes, the organism can replace *all* of its parts. Can a watch do the same? Some readers are sure it can, others aren't. Not only can an organism survive complete part replacement, but it can endure a twofold increase in its size, as well as the loss of half of its weight. And as we shall see in our discussion of brain transplants in the next section, the organism may even be able to survive the loss of everything from the neck down. Can a watch double in size? Can it be halved? The reader's response is probably either 'no' or 'I don't know.' Artifacts also suffer from Ship of Theseus puzzles that organisms avoid. If the matter that used to be part of the reader was tracked and reassembled, no one would think there was a puzzle over which being was now the reader. The

reassembled matter would obviously be a duplicate of the reader at an earlier age.

Since artifacts differ from organisms in their capacity to exist without ever being able to function, their ability to survive in a scattered form, and in their inability to (uncontroversially) survive complete part replacement, it isn't at all clear to me that nonfunctioning artifacts can provide analogical support for the claim that nonfunctioning organisms still exist. Thus I advise readers to be very wary of an argument that uses the existence of nonfunctioning artifacts as support for the position that organisms still exist in deceased states 'when they retain enough of the organization of parts that is a product of their biological development' (Mackie 1999, p.236).

10. Problems that Brain Transplants Pose for Those Who Identify the Body and Organism

The identification of the body and the organism is not defensible if the organism can be transplanted and the body left behind. Van Inwagen and Olson maintain that a whole brain (and brainstem) transplant would be the transplant of a human organism - though one greatly reduced in size by the brain removal operation.[13] Though Olson and van Inwagen would deny it, most people would say that what remains behind in the operating room after the brain is removed is a human body - though one slightly reduced in size by the surgery.[14] And after the human body and the human animal are separated, either the body or the animal could be destroyed while the other continues to exist. Thus they couldn't be considered each a part of one and the same 'scattered object.' And so with different persistence conditions, the human organism and the human body must be different entities. And if the organism and body are distinct entities, then *before* the brain removal surgery, the body and the organism were distinct entities that were spatially coincident, thus violating supervenience. The two entities had all their physical properties in common, but their modal and dispositional properties differed.

Would Feldman, Carter and Mackie claim that the body ceases to exist when it loses its head? Are they willing to say that a decapitated 'body' is not really a body? I would be quite surprised to hear that this is their view. Perhaps they could deny that a whole brain and brainstem transplant is the transplantation of an organism. Unless they accept one of these alternatives, it would appear that the body and the organism can go their separate ways and thus the organism cannot be identified with the body nor 'organism' treated as a phase sortal with 'body' treated as a substance sortal. And this would mean that prior to the transplant, the body and the organism were spatially coincident. So it seems that if Feldman, Carter and Mackie accept organism transplants, then they can't avoid the quandaries of spatially coincident objects - unless they deny the existence of the body.

Let's assume that Feldman, Mackie and Carter resist the claim that the detached head - the whole brain and brain stem - is really an organism. They could maintain that the removed brain has no more claim to be the original organism than a removed kidney kept on ice and readied for transplantation. The detached brain is an organ, not an organism. Feldman, Mackie and Carter's position could be that the organism just is the body, and that it has either died when its brain was removed or it has been kept alive in a brainless state on mechanical life support.

The reason Olson thinks the detached brain would actually be an organism, the same organism that before the transplant was nine times larger, is that the detached head, with the whole brain intact, would behave like an organism if attached to some life support: it would regulate its metabolic rate and wake-sleep cycle; it would retain its muscle tone (even if no consciousness was present); its pupils would open and close depending upon the amount of light hitting the retina; and the lens of the eye would focus and so on. The organs that control the autonomous nervous system and direct his vital functions are present and intact in the detached head (1997, p. 133).[15] Of course,

the head lacks many organs that it still has the controls for, and it needs life support to do what those organs did. But Olson thinks it is still an animal, just a debilitated one, far more debilitated then a being with kidney failure who needs a dialysis machine to survive. Without a heart and lung machine the detached brain would remain alive for only a few minutes (until it dies of oxygen starvation) whereas you could remain alive without kidneys for a few days (until you die of blood poisoning.) Nevertheless, the detached brain remains an organism because it retains the capacity to coordinate the organism's vital functions.

According to Olson, what is left behind after the whole brain is removed is a mere heap of flesh, a headless corpse. That heap is composed of organisms, individual cells, that will briefly live, but together they don't compose anything as they did before the brain was lost. These cells don't function as a unit. When the head is removed, all of the organism's life sustaining functions cease. You might close the wound and pump air into the lungs with a respirator and perhaps stimulate the heart electronically. This might preserve organs for transplant but wouldn't preserve an organism, the parts wouldn't compose a living being, everything would have to be stimulated from outside. The headless object would not regulate its temperature or the rate of its metabolism. Food would not move through the digestive tract and the glands would not secrete their usual secretions. There would be no swallowing or coughing reflex, as a result fluid would gather in the lungs. This is because the organs that once governed those activities - the pons, medulla oblongata and hypothalamus among others, are missing.[16] The headless being is no more an organism than a detached 'arm' is an organism when it is connected to a machine that makes its muscles contract and thus its hand roll up into a fist.

How might Feldman, Mackie and Carter argue that the brainless body left behind is an organism if it is attached to life support? They could begin by asking weren't we all once embryos or

early fetuses who did not yet have brains?[17] If we each once existed as a brainless organism when an embryo, why can't we each exist again late in life without a brain?[18] Is being 'hooked up to' and dependent upon one's mother's body so different from being "hooked up to" and dependent upon life support machines?[19] Perhaps it is not. So we don't yet have a *decisive* argument that the body and organism are distinct nor, of course, that there is no such thing as the body. Although the controversy has not been resolved, it is fair to say that the discussion of brain transplants provides us with more reason than before to doubt that one can defend the existence of the body without having to tolerate spatially coincident entities. Thus an alleged advantage of Carter, Mackie and Feldman's approach over that of van Inwagen and Olson's, may be only that – an alleged advantage. My contention is that if the way in which 'body' is used makes it difficult to identify the body with the organism, we should be suspicious that there exists any such thing as the body. It would be good if we could find a reason to be skeptical of the body's existence because spatially coincident entities produce such metaphysical quandaries. But even if the organism is identified with the body, it is a mistake to believe that entity survives death. Or so I will argue in the remaining sections.

11. What Makes Something a Part of the Body?

An approach that considers the body to survive death is only plausible if sense can be made of the phrase 'human body' that isn't parasitical on the notion of 'living organism.' The reason for this is that the body is alleged to survive death but to do so without any longer being a living organism. So an account of what it is to be a body part derived from what it is to be part of a living organism would appear to be insufficient since things will allegedly be body parts after they have ceased to be parts of a living organism. I doubt that any acceptable alternative account of body part can be put forth. The lack of a coherent idea of what would make something a part of that dead thing leads me conclude that we shouldn't claim a living entity survives death.

If readers follow Shoemaker in understanding the person's body as 'constituted by certain relations of causal dependence between states of that body and sensory and volitional states of the person,' then they might not be able to include their hair or nails or parts of their brain as parts of their body because such entities are not *directly* moveable nor do they have any pain receptors or any other form of sensitivity.[20] If readers argue that they are within parts that are under one's volition, the same is true for a splinter of wood under one's skin. But such a sliver is intuitively not part of the body. It is a 'foreign body.' My contention is that the only meaning we can give the phrase "foreign body" is one fully derived from the idea of something not being part of an *organism*, i.e., being foreign to the biological life processes of the organism. Thus 'foreign body' is really a biological phrase and only makes sense in the context of a living biological entity and what belongs to and what doesn't belong to the organism. It is to support this claim that I now turn.

My intuition, and I would be surprised if it wasn't shared by the reader, is that a clump of dirt stuck to one's arm is not part of one's body. When I clean my body, the dirt doesn't remain as a part of the cleaned body, nor does its removal alter my body's real weight. But why isn't it part of my body? What is it for something to be part of my body? It is not that the dirt lacks my DNA and that a genuine body part is something with my DNA, for most of what we intuitively consider to be my body lacks my DNA.[21] Could it be that the decisive feature is that the dirt clump, unlike a real body part, serves no function? This seems very unlikely to work for when I am connected to a respirator or a dialysis machine or heart stimulating equipment, these marvels of medical technology are each serving a function, very vital ones, without which I would be dead. Less vital, but still 'function-serving' is a walking cane or glasses. Our intuitions are that those function- providing entities would not be part of anyone's body. Is the problem that such functioning things are outside the appropriate boundary? However, put such items under the skin, as with a pacemaker, and I still don't think that

this transformed account of 'functioning body part' will preserve our intuitions about the body. This is, in part, because each of us has an appendix that never functioned at any time during our existence. Yet we are of the opinion that the appendix is part of the human body. So further alterations in our account are required. Perhaps to be a body part is to once have in the history of the individual's species served a function. But consider a fetus that dies with a brain partially-developed. Neither this fetus, nor any in the past, has ever used its half-finished brain to perform any functions - but surely the undeveloped brain is part of the fetus' body - if there is any such entity as the body. So a further amendment is needed and this might be that a body part has the *potential* to serve a function. Thus we now have the criteria for something being a body part that this something is inside a boundary, and will either serve a function, or did so earlier in an individual's life or in the species' history, or could serve a function when developed. But this can be seen to be unworkable if we consider the phenotypical expression of a recent mutation that serves no adaptive function and won't be selected and become a species-wide trait. It is intuitively part of the body but it doesn't serve a function, nor will it ever in the species's history.

What I believe this discussion shows is that a nonbiological analysis of the terms 'body part' and 'foreign body,' that is, an analysis that doesn't identify body parts with being part of the living organism, is a massive confusion of conflicting intuitions which can only be 'saved,' if it can, by some ad hoc conceptual gerrymanderring resulting in a disjunctive account. And I suspect that new disjuncts will need to be constantly added as we get more imaginative. Some readers might disagree and instead argue that I have just showed there are indeterminate cases in which we can't say whether something is or is not part of the body. However I challenge them to give an account of the body in standard cases. And as I point out below, in all of these just discussed cases, normal and abnormal, a biological account of what is part of an organism can give a straight-forward answer.

The lesson I think that we should take from the above discussion is that the only firm notion we have of a 'foreign body,' i.e., why something like a clump of dirt is a foreign body, is that it is not caught up in a 'common life' as Locke would say.[22] The dirt is not part of a biological system. It serves no role, nor is 'monitored' and serviced by the rest of the organism. The dirt, or even the pacemaker, doesn't scar, it doesn't get infected, it doesn't get repaired by the organism, it does not get protected by antibodies, it doesn't need oxygen or nutrients, vitamins don't nourish them and when the body needs iron, it is not taken from the dirt or pacemaker (Olson 1997, p. 135). And neither changes in the pacemaker nor the dirt's size or condition are physical results of what happens in the rest of the organism. They don't grow or decay with the growth or death of the organism. That is, while the organism dies, the structure of the pacemaker and dirt are unaffected unlike that of every other part of the body. The best of these candidates for the label 'body part,' the pacemaker, is so only because it is a functional substitute for a biological organ. But the pacemaker is not like the heart or, for that matter, any other organ. It plays a role in the functioning of the organism but it is not reciprocally dependent as are all the other organs. The lungs and the kidneys need the pacemaker but the converse isn't true. However, a real heart would be reciprocally dependent, needing the lungs to bring it oxygen and the kidney to cleanse its system of toxins. So I conclude that the reason we shouldn't consider pacemakers or dirt clumps part of the body is that they do not biologically participate in the life of the organism - growing, scarring, dying, healing, etc. It is this lack which determines what is a foreign body, not the absence of a function combined with some other traits.

Assuming that we can only make sense of 'foreign body' when it is understood biologically, can any use of this idea be made by a champion of the position that considers 'organism' and 'body' to be equivalent substance sortals or an advocate of the Bodily Approach to personal identity who understands 'organism' as a phase sortal and 'body' as a substance sortal? Since the body is going to

exist after it ceases to be alive, I don't see how they are going to be able to distinguish what is a genuine part of the dead body from what is a foreign body in the corpse. There wouldn't be any immune reactions or part assimilating processes of metabolism in the dead body which can determine what belongs and what is foreign. Perhaps the philosopher who believes dead bodies exist would use the processes of the living body to determine what is a part of it and then claim that something is a part of the dead body if and only if it was earlier a part of the living body.[23] But one should be suspicious of this move for the meaning of 'body' is so parasitical upon our conception of a living organism. Since the living organism does all the classificatory work, it seems implausible to bring in the body that can be alive and dead and give it our ontological blessing. Recall the earlier point that nothing has its persistence conditions in virtue of the properties that qualify it to fall under one phase sortal rather than another. In other words, nothing is essentially a cook, American, student, wife, neonate or child. But the approach now under consideration maintains that parthood of a substance, the body, is determined by the properties picked out by the phase sortal 'living organism.' I am suspicious that the properties placing something in the extension of a phase sortal should determine the mereological relation of the substance. Consider the phase sortal 'neonate.' We wouldn't appeal to any property, process or principle that provided us with just a list of neonate parts to determine whether something is a body part or foreign body within the later adolescent. If we did, new entities appearing during puberty would be considered foreign bodies. But an analogous move is being made by the believer in the existence of dead bodies

Even if the reader is content with allowing the bodily approach to make an exception for some phase sortals like 'organism,' distinguishing them from sortals like 'student' and 'neonate,' this is not my only argument against the existence of a dead organism or dead body. I argue in the subsequent section in the paper that we should construe the organism as essentially alive. And then

in the section following that, I show how the advocates of the existence of dead bodies will end up having to accept bizarre disjunctive persistence conditions and changing part/whole relations.

12. Biological Essentialism

I am not aware of any accounts of what it is to be an organism in which being alive doesn't play a part in the definition. While biologists and philosophers differ in their lists of other necessary properties, not all agreeing that it is essential that the organism have the ability to replicate, or mutate and evolve, or certain physiological processes, no one suggests that the proper account of an organism's nature can ignore its intimate ties to life processes. I would insist that an organism is *essentially* a living entity. What else could be its essence? But perhaps my rhetorical question is not fair. Others will insist that an organism has to be alive but it need not always be alive. But why think an organism can survive death? That is, why provide disjunctive persistence conditions - an organism exists as long as it is alive or once was alive and maintains enough of its structure? What is so important about *structure*? I understand an organism to be an entity that functions as a unit in virtue of its reciprocally dependent life processes. The structure doesn't matter metaphysically, only the systematic processes do. Compare a zygote or an early embryo to an adult. What structures do they have in common? None or virtually none. They don't have the same organs, tissues and bones. The former don't look humanoid. Their "bodies" don't resemble that of even an advanced fetus or neonate, much less a child or adult. Before the onset of a primitive streak, two weeks or so after fertilization, we can't even speak of the top or bottom, right or left, front or back of the conceptus (Ford 1988, pp.170-82). But zygotes and early embryos are alive for certain reciprocally dependent processes - the metabolism of food, the assimilation of oxygen, the excretion of waste, the maintenance of homeostasis etc. - go on within them. It is these processes that are essential, not the

particular structure or organization that realizes them at any particular time.[24]

If a body is *not* essentially alive, did it ever have to be alive? Could we have come into existence as dead entities? Mackie and Carter should answer in the negative if they insist that we are essentially organisms. However, I think Feldman would answer in the affirmative. He would have to admit that Frankenstein existed before the switch was thrown. But even more problematic is that Frankenstein could have existed even if the switch was thrown but the energy didn't animate him. One reason for imputing this view to Feldman is that he says that while most zygotes were alive, and that we were all each once zygotes, it is possible that there were zygotes so defective that they never lived.[25] Since Feldman believes that we were each once a zygote, but it isn't necessary for a zygote ever to have been alive in order for it to exist, then he is committed to it being possible that we could have existed without ever being alive. If one thinks that this is impossible, then one shouldn't identify organisms with bodies. And if organisms are not identical to bodies, then one's ontology *may* have to permit spatially coincident entities (Feldman 1992, p.111).

13. Part Replacement and the 1st Symmetry Problem for Believers in the Body's Existence

One rather compelling reason for denying that distinct from the living organism is something that can be called the 'human body' is that the alleged body can at different times have such a different relationship to its parts and composite matter. This is very odd. Those readers who rejected my earlier advice about being wary of extending ontological claims about artifacts to organisms, should ask themselves if there could be a desk, or any artifact, that at one time could endure the gradual removal and replacement of *all* of its original matter while at a later time it could only survive gradual part replacement that doesn't go beyond some percentage that is well below the earlier 100% part replacement? I doubt that there is any such thing. But those people who insist upon the existence of the human body that can be alive and dead, yet one and the same body

throughout, are more than likely going to have to embrace such changing part/whole relationships in the case of the human body even though they probably won't accept such disjunctive persistence conditions anywhere else in their ontology.[26] While people don't think anything strange about a living body replacing its matter or adding to it, most are very reluctant to admit that a dead body can survive the replacement of its matter or can double its size.

To reinforce this point, consider a scenario where a perverse morgue or cemetery worker replaces (however gradually) all the matter of a dead body with qualitatively identical matter. Would this be the same dead body? I think the intuition of most people would be that we have a new entity - or a different aggregate of matter. But replacement of the matter of a living body - an organism - is not metaphysically problematic, i.e., not a threat to the persistence or identity of the being undergoing the replacement. It is only problematic if it happens too quickly or in too large amounts, that is, the organism has not had time to assimilate the new matter to its existing parts.[27] A living organism can become larger, even double its size, growing from being three feet tall to six and increasing its weight from a hundred and fifty pounds to three hundred. But what if our perverse morgue employee increased a child's 'corpse' from three to six feet, adding matter to the remains of the same type? Would it be the same body? I doubt most readers would respond in the affirmative. And readers would probably claim this even if the added matter was similar and combined in a way that it cohered with the rest of the corpse in the same way that the existing, already attached dead matter composing the bones and decaying tissue does. But perhaps many readers just wouldn't know what to say. The organism, on the other hand, doesn't elicit such ambivalence or judgments of indeterminacy when its parts are replaced or added to. One plausible-sounding explanation of this is that an organism is a natural kind, each token a genuine individual, while the dead human body is just a projected patchwork and not a real entity whose properties can be discovered.

It deserves emphasizing how odd it is that the same object can have such very different relationships to its parts. This would mean that an entity had disjunctive persistence conditions: it survives at one time when there exists a certain percentage of its parts, but it cannot survive with the same percentage of part replacement at another time. This is all very strange. Instead of positing an entity with disjunctive persistence conditions indexed to different times, perhaps we should maintain that the dead and living body are *not* two stages of one and the same object. Maybe the only existing bodies are living bodies, each identical to a human organism, while the dead body is not a body at all, but the remains of an organism. A *dead body* would then be no more a body than a *dry lake* is a lake, or a *toy soldier* is a soldier, or *counterfeit money* is money.[28]

14. The 2nd Symmetry Problem Confronting Believers in the Body's Existence

The fore-mentioned asymmetry regarding part replacement in an organism and in the dead body is not the only asymmetry plaguing those who believe dead bodies exist and that organisms are identical to such bodies. A second asymmetry arises if we ponder the related questions of when does a body come into existence and when does it cease to exist? Defenders of the body don't provide us with very detailed answers to either question. Nor do they tell us what a body is.[29] Perhaps they think it is obvious. I am going to assume that bodies which are not cremated, or otherwise destroyed suddenly as in an explosion, cease to exist when the decomposition is so severe that the anatomical structures are difficult for the untrained eye to recognize as distinctively human. Thus when most of the skeleton, tissues and organs of the body have been destroyed, the body ceases to exist. Perhaps the body ceases to exist earlier - is a bare skeleton still a body? But whatever the right analysis of skeletons, this won't affect the point that I am making about the lack of symmetry in persistence conditions.

Once we are confident that we know when a body ceases to exist (and this doesn't mean that

we cannot allow for some vagueness), considerations of symmetry should inform us when a body comes into existence. Could a body come into existence if it didn't have the basic tissue and skeletal development, the loss of which causes it to go out of existence? One would think not. But if a human body must have certain skeletal structures and tissue development to exist, then if we are identical to our bodies as Feldman and Mackie and others believe, none of us were ever early embryos because of the lack then of the basic anatomical structures that later are essential to the persistence of the body.[30] I don't think Mackie and Feldman will be happy with this consequence of their position. But I think they are forced into such a position if Lawrence Becker is correct. Becker argues that the basic structures of a human being are complete when: 1. the organism has assumed its basic gross anatomical form, normal or not (by which is meant its basic skeletal structure, musculature, arrangement of organ masses, and distribution of tissues); 2. the organism's inventory of histologically differentiated organs is complete (1973, pp.342-45). Basic anatomical structure is complete at three months after fertilization. This is supported by the claim that then: "with the aid of a simple magnifier, every gross anatomical detail can be seen" (Elias, 1971 p. vii). According to Becker, further changes in morphology are either the regional growth of existing structures, or clearly in the category of refinements, adaptation, and maturation of those structures (1973, p. 345). The histogenesis of organs poses a greater problem. Lungs and digestive tracts are undergoing basic development into the sixth month after fertilization. Perhaps it is not until the ninth month that any further generative development can be classified as non basic.[31] Since preformationism is not true, it is a stretch to claim that our *bodies* existed in the first couple of months in our mothers' pregnancies.

But there is a human organism existing three weeks after fertilization, and perhaps even earlier. Around this time there can be found an incipient circulatory system which for the first time unites the different cells of the conceptus into a functional unit - circulating food, fuel, oxygen and

removing wastes for the benefit of all the cells. Before this time, it may be best to understand 'conceptus' to be a plural referring term which just picks out a lot of separate organisms, i.e. cells, which do not yet together compose an organism. They no more compose a single organism than does a pyramid of cheerleaders. The blastomeres (individual cells of the conceptus) are in contact, kept together by an outer membrane, but they don't systematically interact for the benefit of a larger organism in the first few weeks. So it appears that an organism can predate the body. Afortiori, 'organism' cannot be a phase sortal that picks out a body by inessential properties. And if the organism ceases to exist at death unlike the body, or if the organism can be transplanted and the body left behind, 'body' cannot be a phase sortal and 'organism' a substance sortal. Therefore, if the body does exist, then the Bodily Approach of identity doesn't avoid the problems of spatially coincident entities.

Mackie claims that the dead organism, which I take him to identify with the corpse and the dead body, 'persists for as long as it retains *enough* of its parts in a *sufficiently* similar state of organization'(1999 p. 238). Elsewhere he writes that the body survives if it 'remains *sufficiently* nearly intact' (1999, p. 237). But '*enough*' and '*sufficient*' are not part of definitions or criteria, they merely make reference to them and thus are not very helpful by themselves. To say that something ceases to exist when enough of its parts are destroyed is a useless truism. Everything ceases to exist when too many of its parts or too much of its structure are destroyed. I suppose that Mackie's claim of 'remains sufficiently intact' could be charitably taken to mean that most of the tissues, organs and skeleton of the living being must remain for the dead organism to persist. I think that there lurks here a real danger of 'perceptual intuition mongering.' What is enough structure for the coroner, forensic scientist or physical anthropologist might not appear to be so for the layperson. Moreover, if the organism existed three weeks after fertilization without most of those organs, tissues and

skeleton, why are they necessary to the persistence of the dead organism? It's the life processes that are important, not the structures that at one time make them possible. And surely those structures can't be important to one's identity if they no longer even possess the capacity to support a revived organism as do the structures of frozen eggs and perhaps cryogenically frozen people in a scientifically advanced future. And Mackie admits 'I am not claiming that it is necessary for the persistence of a human being that it actually be apt for life, if that is understood as meaning that it would have to be so perfectly intact that it might in principle be revivable' (1999, p. 237 n. 21).

Perhaps Mackie and other opponents of the termination theses could abandon symmetry considerations and just insist that the body begins to exist at either: 1) fertilization, or 2) the end of the period in which twinning is possible, or 3) the formation of a primitive streak and an axis providing an entity with up and down, front and back at fourteen to seventeen days, or 4) the onset of a heartbeat and primitive circulatory at the beginning of the fourth week. But then what sort of account can be given of the body? If one's body existed so early in a pregnancy, then it once existed without any physical similarities to its later structure, a structure it cannot survive the loss of. So friends of the body would have to put forth some disjunctive persistence conditions. And there may be more than two disjuncts since a zygote, morula, blastocyst, gastrula, early embryo, late embryo and fetus have very different appearances and structures. The changes separating some of the stages between zygote and late fetus are so dramatic that some biologists consider human generative development to be a kind of metamorphosis. N.J. Berril writes 'metamorphosis...primarily consists in the differential destruction of certain tissues, accompanied by an increase in growth and differentiation of other tissues...The phenomenon of regional growth and differentiation associated with local cell death in developing limbs comes into this category' (1973, pp.423-24). If development is a form of metamorphosis, in some sense akin to the changes of caterpillar to

butterfly, then unless one wants to say that the latter pair have the same body, perhaps one should not say we have the same body now that we had when early embryos.

So even if we can make sense of what it is to be body by exploring what it is to be a part of a living body, a project I argued earlier wouldn't be successful, there still doesn't seem to be any reason to think we have the same body now that we had earlier in our lives. If our bodies are not essential to us, not only is the identification of the body and organism erroneous, but there is less reason to think we exist as long as our dead bodies remain nearly intact.

15. Too Much Vagueness?

Feldman suggests terminators may be attracted to death as the moment of nonexistence because it is a big change and one that doesn't suffer from the same degree of vagueness as an account that must determine how much of one's skeleton or tissues must remain for one's body to exist (2000, p.106). But he points out, as does Mackie, that vagueness is unavoidable when determining the nonexistence of most things, so we shouldn't try to avoid it by embracing death as a well defined moment of nonexistence. I agree that many things and properties have vague boundaries, and this isn't a reason to deny their existence. However, there is vagueness and then there is *Vagueness*. The body suffers from what I will call 'unprincipled vagueness.' We have very little idea of what the body is and thus very little grasp about when it ceases to exist. Unlike mountains, baldness or tallness, with the body we don't know even which are the things and properties (skeleton, shape or organs and tissue?) that will present us with borderline cases of their instances.

We saw how vague body talk was when we examined part replacement, decaying organs and flesh, perverse morgue employees, and the symmetry problems. We have a much better sense of the persistence conditions of even chairs and furniture than bodies, and artifacts are generally looked

upon with more ontological skepticism than natural kinds. Can a body lose its entire right side and still exist? Is a mummy a body or just the shell of a body? Is a skeleton a body or does it need some organs and flesh to be part of a body? Feldman doesn't say. 'Dead organism' and 'dead body' may be vague, but they should not fail to distinguish skeletons without organs and tissues from those with some 'flesh on their bones.'

Can a dead body have new limbs added to it? Can it double its height, width and weight? Can it have an organ transplanted into its carcass? Would that organ be a foreign body? What if the organ had once been part of the (alleged) body but was surgically removed long ago? I suspect that many readers just don't know how to respond to these questions and those above. However, parallel questions about living organisms have obvious answers. My contention is that the body appears to suffer from so much unprincipled vagueness because it is not a genuine natural kind. Thus the problem is not really that the 'body' has a vague extension, but that there is no such thing as the body if anything other than living organism is meant by the term. Given all the problems that the body poses, I believe that we are warranted in concluding that each of us neither has nor is identical to a body that will continue to exist after our deaths.[32]

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[1] Eric Olson (1997) has explored the Biological Approach to personal identity more thoroughly than anyone else.

[2] Even if the reader doesn't believe that the *self-consciousness* associated with personhood is essential to survival, but instead believes that just mere consciousness or some other psychological trait is sufficient, the same problems will arise as long as a psychological substance sortal is substituted for 'person.'

[3] For a sampling of the problems with spatially coincident entities see Olson (1997, pp. 97-102), Carter (1988), Zimmerman (1995, pp. 85-94).

[4] For an account of substance and phase sortals, see David Wiggins (1980, pp. 23-27).

[5] In a review of Olson's book, though it is not perfectly clear whether he is expressing his own view or a consequence of Olson's, Shoemaker writes: 'that coincident with a human animal there is bodily entity that is not identical with it because it continues to exist as corpse, after the animal has ceased to exist.' (Shoemaker 1999, p. 449).

[6] I am indebted to an anonymous reviewer for the need to distinguish two types of Termination theses – one that insists the organism ceases to exist at death, the other that

emphasizes that the body ceases to exist at death. The former denies the existence of a dead organism. The latter denies the existence of a dead body or corpse.

[7]In Baker's case, this involves the loss of self-consciousness necessary to what she describes as the first-person perspective (2000, pp. 59-88).

[8] See Carter (1999, p. 167), Baker (2000, pp. 207-08); Shoemaker (1999a, p. 499).

[9] Shoemaker's response is typical: 'Olson rightly ridicules the suggestion that the fetus goes out of existence when the person comes into existence. But it seems equally ridiculous to say that the corpse is something that comes into existence at death' (1999a, p. 499).

[10] Shoemaker and Baker believe that positing spatially coincident entities don't lead to all the problems that Olson blames them for. I am of the opinion that Olson's critique of Shoemaker's view (2002) is successful, but am less sure about his response to Baker (2001a, 2001b).

[11]One could add Judith Thomson to the list. See her comments on dead people and dead cats (1997, p. 202). I leave her out of the discussion because she never comments upon either van Inwagen or Olson's version of the Termination Thesis.

[12] I believe that Baker is correct in her observation: 'that we don't speak consistently about the dead, and the linguistic evidence, such as it is, betrays the unclarity of our ideas about life and death' (2000, p.120). So perhaps Mackie is wrong to appeal to the ideas of nonphilosophers in order to designate his view the 'default position' (1999, p. 234).

[13] Why it has to be the *whole* brain transplant will become apparent below. In brief, merely an *upper* brain transplant won't be enough to separate the organism from the body.

[14] Olson and van Inwagen do not share this view for they do not believe there is any such entity as the human body.

[15]See the work of van Inwagen for a similar account (1991, pp.167-187).

[16]For Olson, what is essential is the brain stem. An upper brain transplant wouldn't be the transplant of the organism. Shoemaker wonders about the importance granted the brain stem. He wonders whether then it doesn't follow that merely transplanting the brain stem would count as transplanting the organism. He is incredulous about the prospect of this. (1999a, p. 503.).

[17] 'Embryo' is standardly applied to the conceptus from two to eight weeks after fertilization, and 'fetus' is the appropriate label from eight weeks to birth.

[18] See Becker (1973, p. 355). See also the discussion of LeGallois's decapitation experiments (Wikler and Green 1980, p. 111 n. 14).

[19] Even though the brainstem comes to be the 'control center' of the organism, Wikler and Green argue that 'the source of control is not important; what matter is whether the job is done' (1980, p. 113).

[20] (Shoemaker 1991b, p. 287). However, the roots of their hair and nails are obviously pain sensitive.

[21]And the parts of my DNA don't consist of DNA. Is DNA even essential for a living body? Couldn't ZNA do the job? Feldman thinks so (1992, pp. 50-1). And he finds a similar idea in Crick (1981 pp. 61-2).

[22](Locke 1975, p. 331) See also J.Z. Young' discussion of 'the essence of a living thing consisting of atoms of the ordinary chemical elements...caught up in the living system and made part of it for a while' (1971) which is also reprinted and endorsed by Wiggins's in his *Sameness and Substance* (1980).

[23] Perhaps this maneuver does allow the defender of the body to escape the claim of van Inwagen's that the word 'body' is just nonsense (1992, pp. 284-85).

[24] Structure would be essential if one wanted to claim, as van Inwagen does, that as long as the disposition to carry out life processes remains intact, than the organism continues to exist - though perhaps in a suspended state. But neither Mackie nor Feldman think that an organism must be capable of being revived to continue to exist (Mackie, p. 237 n. 21).

[25] (Feldman 1992, p. 118). Feldman also writes: 'it is not a matter of conceptual necessity that something must be alive at some time to be human' (1992, p. 110).

[26] Or they have to allow complete change of dead body parts. Nathan Salmon suggested to me that this is exactly what happens when bone fossilizes but we consider it the same bone though made of new material. I wouldn't consider this the same bone any more than I would consider the mummified remains of the pharaoh to be the pharaoh. As van Inwagen says, 'it is

the shell of the pharaoh' (1990, p. 295).

[27] See Unger (1990) for a good account of assimilation. Of course, if the replacement occurs too quickly, we might not feel the entity in question has survived, instead, we would tend to say that it has been replaced by a qualitatively identical but quantitatively distinct duplicate. So it appears that there is a limit to the speed (and size) in which parts can be replaced even in organisms. This has something to do with assimilation of the new parts with the old, perhaps they have to be caught up for some time in the same life processes.

[28] The first two of these linguistic comparisons are borrowed from Olson (1997).The third is from E.J. Lowe via Mackie (1999, p. 222).

[29] Nor do they try to meet van Inwagen's challenge to give an answer to the special composition question 'that there is some Y and it is composed of the Xs when ...' (1991, pp. 21-33).

[30] Feldman claims that we each were once a zygote (1992, pp. 107-114). He also uses 'fetus' as the name of an object from fertilization to birth. Carter claims that we were all once zygotes. What body structures does a zygote have in common with an adult corpse?

[31] This account is not going to solve our earlier problem of what makes something a body part. There will be a lot of things that are intuitively part of the body yet not present at this stage

[32] I would like to thank Barry Smith, Nathan Salmon, Tony Brueckner, Tony Anderson, Kevin Falvey, and especially an anonymous reviewer for very helpful comments or

conversations on these matters.

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