



Why psychological accounts of personal identity can accept a brain death criterion and biological definition of death

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Abstract

Psychological accounts of personal identity claim that the human person is not identical to the human animal. Advocates of such accounts maintain that the definition and criterion of death for a human person should differ from the definition and criterion of death for a human animal. My contention is instead that psychological accounts of personal identity should have human persons dying deaths that are defined biologically, just like the deaths of human animals. Moreover, if brain death is the correct criterion for the death of a human animal, then it is also the correct criterion for the death of a human person. What the nonidentity of persons and animals requires is only that they have distinct criteria for ceasing to exist.

Keywords Death · Brain death · Nonexistence · Definition · Criterion · Persons · Animals

The term “death” can refer to our ceasing to exist ... or it can refer to a biological event in the history of an organism. ... An organism dies in the biological sense when it loses the capacity for integrated functioning. ... But if we are not organisms, this is of little consequence. ... What it is important to be able to determine is when we die in the nonbiological sense—that is, when we cease to exist. ... We die or cease to exist when we irreversibly lose the capacity for consciousness.... The best criterion for when this happens is a higher-brain criterion.

—Jeff McMahan, “The Metaphysics of Brain Death” [1]

The word “life” may refer to a person’s life or to an organism’s life. Since a human organism exists before it constitutes a person, the life of the organism is not identical to the life of any person. ... Persons have first-person perspectives essentially: ... We mature persons can think of ourselves from the first-personal point of view; we can reflect on our thoughts—our motives, our desires, our beliefs, our actions.... Hence, a person dies with the irreversible loss of a first-person perspective.... So, medically speaking, there are criteria that distinguish between the death of a person and the death of an organism that constitutes a person—namely,

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permanent cessation of higher brain function and cessation of all brain function.

—Lynne Rudder Baker, “When Do Persons Begin and End?” [2]

The death of persons, unlike that of bodies, regularly consists in their ceasing to exist. ... We have argued, following other personal identity theorists, that a given person ceases to exist with the destruction of whatever processes there are which normally underlie that person’s psychological continuity and connectedness.... These processes are essentially neurological, so that irreversible cessation of upper-brain functioning constitutes the death of that person. Whole-brain death is also death for persons, but only because whole-brain death is partly comprised of upper-brain death.

—Michael Green and Daniel Wikler, “Brain Death and Personal Identity” [3]

Introduction

I understand psychological accounts of personal identity (hereafter PAPI) to be committed to the thesis that people essentially possess psychological properties or capacities and do not essentially possess the biological properties constitutive of life.¹ The above three quotations are taken from prominent advocates of PAPI. The order of the quotations is such that each demands more psychological capacities than the previous in order to conclude that a person is alive—mere consciousness [1], self-consciousness [2], and psychological continuity and connectedness [3], respectively. Those quoted maintain that the definition and criterion of death for the human animal are not applicable to the human person.² They believe that PAPI reveal the need for two additions to accounts of death. First, these accounts must add a *definition* of death for persons. This definition should capture the sense

¹ I am not a defender of any psychological account of personal identity. My own view is what Patrick Toner calls latter-day animalism [4]. Peter van Inwagen [5] and Eric Olson [6, 7] are the most prominent latter-day animalists. The original animalists were Aristotle and Thomas Aquinas. All animalists identify us with human animals. Aristotle and Aquinas work within a hylomorphic metaphysics that characterizes us as essentially rational animals. Van Inwagen and Olson do not insist that human animals are essentially rational as psychological traits are contingent features of human animals. The non-essentiality of the mental is evident in the title of Olson’s seminal work: *The Human Animal: Personal Identity without Psychology* [6].

² It is worth pointing out that the second [2] and third [3] quoted views do not actually support the higher-brain criterion for death, understanding criteria to be necessary and sufficient conditions. Baker’s first-person perspective is roughly the idea of being self-conscious, and that self-consciousness can be lost before the higher brain is destroyed [7, 8]. Green and Wikler believe that we cease to exist with the loss of psychological continuity, but that loss of continuity can occur before thought is extinguished and the higher brain is destroyed [3]. Furthermore, they accept that one can be destroyed by what John Perry calls a “brain zap” [9]. The zap removes one’s psychology but leaves the brain disposed to acquire new memories and beliefs and so does not require the destruction of the higher brain. Thus Baker, Green, and Wikler seem to be providing a defense of the destruction of the higher brain only as a *sufficient* condition, not as a *necessary* condition for our death. In fact, Baker probably does not even provide a sufficient condition, given that she argues that we are not animals since we could survive the replacement of our organic parts with inorganic parts that preserve the same beliefs, desires, memories, and other mental functions. Our animal would cease to exist if its living cells were replaced with inorganic, nonliving parts, but our person would persist through those material changes because our mental functioning would continue.

in which the death of a person consists in that person's going out of existence rather than dying a biological death. So if biological death is defined in terms of a loss of bodily integration or an incapacity for functioning as a whole, a person's death will not make reference to such a loss of integration or incapacity for functioning, but will consist in that person's going out of existence. The person's death is compatible with the possibility of her body's continuing to function in the biological manner constitutive of life. Second, advocates of PAPI insist that accounts of death need to add a *criterion* for the death of a person—namely, the cessation of the higher brain's production of thought. That criterion provides the necessary and sufficient conditions for the definition of death (of the person) to apply. The three main competitors for such a standard of death are the traditional circulatory/respiratory criterion [10], the now prevalent whole-brain death criterion [11], and the higher-brain criterion favored by the philosophers quoted above [1–3].

My thesis is that PAPI do not require that human persons have different definitions and criteria for death than human animals. PAPI should have persons dying deaths that are defined biologically. If advocates of PAPI accept, say, James Bernat and colleagues' definition of the death of the human animal as "the permanent cessation of functioning of the organism as a whole" [11], then that definition should also be applied to the human person distinct from but overlapping the organism. If brain death is the appropriate criterion for the death of human animals, then it is also the correct criterion for the death of human persons. Instead, what these accounts require are two separate criteria for ceasing to exist, one for the human animal and the other for the overlapping but nonidentical human person.

Death as ceasing to instantiate life processes

The living are alive in virtue of their bodies' engaging in metabolism, homeostasis, and other vital life processes. The living cease to be alive when such processes no longer occur in their bodies. Their bodies will then fail to be functionally integrated in the manner characteristic of the living. So biological death involves ceasing to instantiate life processes. Understanding death at this level of abstraction is rather uncontroversial. The living are distinguished from the dead in virtue of the presence of life processes (or capacities). If a person shares a body with a living animal, then that person dies when life processes are extinguished in that body. The momentary cessation of life processes will not constitute death unless and until such cessation is irreversible. Readers are invited to add their favored interpretation of irreversibility to the cessation of life processes. It may be that death occurs when the laws of science make it physically impossible to restart life processes; or it may be that death takes place when there is no existing technology capable of restarting life processes; or it could be that death arrives when the body cannot autoresuscitate, that is, when it cannot restart life processes without external interventions [12].³ Readers are also invited to add their favored conception of how life processes are integrated. It may

³ See John Lizza [13] for an overview of other versions of irreversibility—technological, moral, probabilistic, and metaphysical.

be that the brain serves as a central integrator, at least after birth;⁴ or it may be that integration does not need the brain as a master part to orchestrate the process. I will proceed as though the established standard, whole-brain death, is the correct criterion for death. However, my thesis can accommodate a definition of death that qualifies irreversibility in different ways and a view of integration that favors the circulatory/respiratory criterion.

The nature of a person's death will depend upon the nature of the person. One very well-known account of the person is provided by constitution theory. Lynne Rudder Baker offers the most sophisticated account of constitution [19], holding that a person is constituted by an animal (body/organism) but is not identical to that animal (body/organism).⁵ The constitution relationship is often illustrated with a lump of clay that constitutes a statue. The statue and the lump are atom-for-atom the same, but they are distinct because they differ in their properties and normally have separate histories. The lump typically exists prior to the sculptor's shaping it in such a way that a statue emerges. The lump can survive the loss of its shape, while the statue cannot. The animal and the person, in this theory, bear a structural similarity to the lump and the statue, respectively. The animal typically exists prior to the emergence of the person with the onset of certain mental features. The animal can survive the loss of those mental features, while the person cannot.

The constituted statue and the constituting lump each has certain properties derivatively because the other has them nonderivatively. For example, the lump may be beautiful or valuable derivatively because the statue is beautiful and valuable nonderivatively. The lump would not have those properties if it were not in a constitution relationship with the statue; hence it possesses them derivatively. The statue has the mass that it does derivatively because the lump has that mass nonderivatively. The lump would have that mass even if it did not constitute the statue; hence it possesses its property of mass nonderivatively. Something similar follows for the mental properties of the person constituted by the animal body. The constituting animal might have thoughts about the meaninglessness of life derivatively because the constituted person has them nonderivatively. The person might suffer a disease derivatively because her animal suffers it nonderivatively. So the person who is alive derivatively will die derivatively when she ceases to instantiate the life processes that her animal instantiates nonderivatively.

Baker is not the only prominent constitution theorist. Another well-known constitution theorist, Sydney Shoemaker, rejects Baker's derivative relational properties but nevertheless writes of persons: "Plainly they are animals" [20]. He observes, "Persons breathe, eat, drink, digest food, excrete waste, and in countless other ways do what animals characteristically do. They have organs—hearts, livers, etc.... So

⁴ See Maureen Condit [14] for the central integrating role of the placenta prior to birth. See Melissa Moschella [15–17] along with Joshua Hoffman and Gary Rosenkrantz [18] for the requirement that there be a "master part" doing the integration.

⁵ When discussing human beings or human persons in this chapter, I will use *body*, *animal*, and *organism*, interchangeably. So any mention of the person's *animal* could be replaced with mention of the person's *organism* or the person's *body*.

a person is an animal with psychological persistence conditions” [20].⁶ For Shoemaker persons are embodied and instantiate life processes—digesting, metabolizing, excreting, maintaining homeostasis, and so forth. Therefore, they die when they cease to instantiate vital life processes.

John Locke is the father of PAPI.⁷ Lockean persons have living bodies. Locke writes of the person: “The Limbs of his Body is to every one a part of himself” [23, p. 337], and “in our very Bodies, all [the] Particles, whilst vitally united to this same thinking conscious self, ... are a part of our selves” [23, p. 336]. So Lockean persons possess vital organs as parts, the functioning of which is constitutive of life. Lockean persons are alive in virtue of having living bodies. Ergo, Lockean persons die when their bodies cease to instantiate life processes.⁸

I contend that the PAPI canvassed so far do not require a second criterion for death. Since persons cease to instantiate life processes and thus die biological deaths, there is no need for a higher-brain criterion: the death of the person, like that of the animal, involves a loss of the biological integration accomplished by the brain.⁹ The same holds for the definition of death. Persons die biological deaths. If one believes that Bernat and colleagues are correct that the death of the animal is best defined as the “the permanent cessation of functioning of the organism as a whole” [11],¹⁰ then this definition should also apply to the person who overlaps the animal.

Since both the human person and the human animal are alive in virtue of instantiating life processes, the criterion for their death will be the same. A single criterion for death provides necessary and sufficient conditions for the death—that is, the irreversible loss of life processes—of both the person and her animal. There is, however, a need for two criteria of nonexistence. While the properties that must be

⁶ Persistence conditions are, as the term suggests, the conditions that must be met for an entity to continue to exist (persist). An animal with psychological persistence conditions persists as long as it retains certain mental features. An animal with biological persistence conditions persists as long as its life processes continue.

⁷ Alfred Whitehead has famously said that the history of European philosophy consists of a series of footnotes to Plato [21, p. 39]. Harold Noonan has claimed that it could be said with even more justice that the history of the philosophy of personal identity consists of a series of footnotes to Locke [22, p. 24].

⁸ Peter Geach writes that one could read the identity chapter of Locke’s *Essay* “like a mail order catalogue,” from which “you buy what suits you” [24, p. 247]. Perhaps he had in mind a Lockean interpretation from the approach that construes persons as modes rather than substances; see Edmund Law [25, pp. 199–200]. This Lockean interpretation does not fit my thesis that persons die biologically: If we are just modes, series of mental events, something like an instantiated program, then we are not material things, flesh and blood, and thus cannot die biological deaths.

⁹ As I said above, even if the brain is not the central integrator constitutive of life, my thesis can be adapted to a circulatory/respiratory criterion. For what it is worth, I was personally persuaded over a decade ago by Alan Shewmon that the brain merely regulates an existing integrated organism [12]. But recent work by Moschella [15–17] and especially Condit [14] has weakened my support for Shewmon’s critique of brain death. I can be more accurately described as fence sitter on the issue of the correct criterion for death. My confidence is only in the claim that the same criterion for death applies to persons and to the animals that can outlive them.

¹⁰ Bernat has since modified the definition of death to “the permanent cessation of the *critical functions* of the organism as a whole” [26].

lost for a living person or animal to die are the same, the attributes that each must respectively lose in order to go out of existence are not. The person goes out of existence when the capacity for thought is lost; the human animal goes out of existence when the body disintegrates.¹¹

Since the conditions for going out of existence are not the same for the human person and the human animal, there need to be two separate criteria for nonexistence. But that does not mean that there are two senses (meanings or definitions) of *nonexistence*.¹² Neither the term *existence* nor the prefix *non* is ambiguous. The meanings of *existence* and *nonexistence* do not change when their object is a person or an animal (or an artifact or natural inanimate object).

It may be helpful to take stock of the previous claims. There is only one sense of *nonexistence*—a position shared by virtually all philosophers. My first controversial claim is that there is a need for only one definition of death that applies to both human persons and human animals. My second controversial claim is that there is a need for only one criterion of death for human persons and human animals. I concede, however, that there is a need for different criteria of nonexistence for human animals and human persons. My next controversial claim is that embodied, living human persons always die a biologically defined death when they go out of existence.

I will first address the question of when and why human persons and human animals cease to exist. If it is just the animal's mental capacity that is lost, then the animal can exist after the person ceases, as psychology is essential only for the person. So animals can survive the onset of a persistent vegetative state or permanent coma, whereas persons cannot. But the person could remain in existence longer than the animal, as in a famous thought experiment where someone's cerebrum is transplanted into the near-empty skull of another human organism and the body that earlier housed it is destroyed. This scenario is taken to show that a human person can switch bodies and is thereby distinct from its animal, which cannot be separated from its body. In another famous personal identity thought experiment in which someone undergoes inorganic part replacement, the animal ceases to exist before the person, as sameness of living body is essential only for animals. The inorganic part replacement thought experiment is thought to involve the person's retaining mental functions despite becoming composed of a very different kind of matter. So the animal dies when its organic body is lost and replaced by silicon parts that do not instantiate life processes, but which continue to sustain the person's psychology. Defenders of inorganic part replacement's compatibility with the person's persistence insist that if someone can undergo normal turnover in organic brain matter

¹¹ Philosophers are divided about what constitutes the body's disintegration and thus the end of its existence. So-called terminators [5, 6, 27] believe that the existence-eliminating disintegration occurs when the animal dies and massive chemical changes occur at the microscopic level, despite the fresh corpse appearing similar to the ante-mortem body. The so-called anti-terminators [28–30] maintain that the body ceases to exist some time after death, when there is considerable decay and loss of structure.

¹² I use *sense*, *meaning*, and *definition* as synonyms here even though there could be words that have a sense or meaning but not a definition because they express primitive concepts that resist decomposition into any smaller semantic components.

and yet retain the same identity-preserving mental capabilities, memories, desires, intentions, and so forth, then persons should continue to exist when the acquisition of inorganic parts maintains their earlier organically realized psychology.

I will now turn to the question of when and why human persons and human animals *die*. Given our present technology, persons die before or when their animals die because the life processes of persons cease when their essential mental capacities are extinguished. So the onset of a persistent vegetative state kills the person. In the two well-known personal identity thought experiments, the person never dies *after* her animal dies.¹³ Persons die when their bodies become inorganic or when they are reduced to the size of the cerebrum, because it is then that they cease to instantiate life processes. Imagine that all of the body is destroyed except the cerebrum, reducing the person from six feet and two hundred pounds to just a few inches and three or four pounds. Even if that organ is alive, the person's original life has ceased. If one assumes that organs are alive, a view that I will reject later, the life of the cerebrum still is not the same as the life of the earlier full-sized person. The latter life ended when the person ceased to have the organism's body and life processes. This is comparable to a ten-day-old multicellular embryo's having all but one cell destroyed. The multicellular embryo does not become a single-cell embryo. The remaining single cell already existed and its life processes were earlier distinct from that of the multicellular embryo, so the life of the embryo is not reduced to that of the single cell.¹⁴

Finally, I will turn to the relationship between nonexistence and death. If human persons cease to exist when they lose their essential psychological properties, they also die at that time as they cease to instantiate life processes. What else could death be but ceasing to instantiate life processes? Embodied human persons thus die biological deaths even if they are not identical to living animals. Persons certainly do not cease to exist and yet remain alive. This alternative would have it that the living person ceases to exist when the capacity for thought is lost, but is then still alive. It is absurd to claim that someone has ceased to exist and yet is still alive. And it seems almost as strange to claim that living persons cease to exist but are then to be described as neither dead nor alive. If the living have ceased to exist, then they have irreversibly ceased to instantiate life processes; that is to say, they are not only no longer alive, but they are dead. If the living person is not identical to the living animal, then an event like the onset of a persistent vegetative state will cause the

¹³ If one thought that biological integration could be lost but there would still be a few moments with just flickers of thoughts, then the person could exist after the death of the organism outside of science fiction and religious scenarios. See Winston Chiong for a brief discussion on the presence of thought post-biological integration [31]. He does not conclude, as advocates of PAPI would, that persons can survive their organisms, only that such organisms are not dead if there is still thought after the loss of bodily integration. I think Chiong is wrong to claim that the organism would survive for a few more seconds, producing thought post-integration. That strikes me as hardly any more plausible than saying that the bird who dies midair is still producing flight until it hits the grounds. However, I do not have the time or space to pursue this matter here.

¹⁴ To avoid further complications with my example, I am assuming that the single cell is not totipotent and so could not give rise to a multicellular organisms.

person to cease to exist and thus die, even though the organism remains in existence and alive.

Two reasons why persons' ceasing to exist seems not to involve their biological deaths

Why do so many theorists resist the idea that persons always die biological deaths? I think a reason why this mistake is so widespread is due to there being, on occasion, neither a typical dying process nor a corpse to be found. It is often held that certain entities, even living ones, can go out of existence without dying—for example, fissioning out of existence when an amoeba divides or an early embryo twins. Jeff McMahan writes:

It makes sense to say that when a unicellular organism, such as an amoeba, undergoes binary fission, it ceases to exist; but in the biological sense it does not *die*. There is no cessation of functioning that turns this once-living organism into a corpse. [32]¹⁵

I would first like to acknowledge a different account of cellular division in which a death occurs regardless of whether the cell has one or two or no successors. Olson offers the following account of cell division that involves death:

While the “plans” (the chromosomes) are being copied, the flow of chemically coded instructions to the rest of the cell is interrupted and its enzyme systems must function without renewal. The nucleus splits in two, and the cell’s organelles arrange themselves symmetrically around an internal axis; the biological event that we might call the cell’s life loses its integrity and divides into two independent streams. It seems appropriate to call this event the birth of two new organisms and the demise of the original cell. [6, p. 114]¹⁶

So the cell dies before it is apparent whether there will be one or two or no successors to it. *Pace* McMahan’s quoted comment, there is indeed a “cessation of functioning”; there is just no corpse, seeing as the two descendants each typically incorporate half of the remains of their living predecessor. But if one imagines neither descendant cell surviving fission—the result being a pair of one-cell stillbirths, so to speak—there would be a corpse, or at least scattered remains.¹⁷ There is no reason to treat “successful” fission differently from “unsuccessful” fission when determining whether the pre-fission organism has died. In both cases there is a death. There is the death of the original single-cell organism when fission is successful and two living descendants are produced, and there is the death of the original cell when

¹⁵ Leon Kass makes a similar point about fission not being death [33, p. 22]. See also David Shoemaker’s remarks [34].

¹⁶ Van Inwagen makes a similar claim [5, pp. 150–151].

¹⁷ See Rose Hershenov and Derek Doroski for accounts of fetal fusion where a dead embryo is incorporated into its living twin [35]. We may never see a corpse, but there was a death.

fissioning does not produce any living descendent cells. Life processes have irreversibly ceased to be instantiated in both scenarios.

It might help readers appreciate the possibility of a corpseless death if they imagine someone who is instantaneously annihilated without a trace by an angry God or pulverized by a nuclear device. In both scenarios, there is no corpse or typical dying process. But surely the person does not cease to exist and remain alive, or cease to exist and become neither alive nor dead.

To appreciate the absurdity of the view that I am arguing against, imagine that a soldier is disintegrated by a thermonuclear device. The army chaplain approaches the soldier's home, and his parents run out and ask: "Is our son dead?" The chaplain says, "The good news is that he is not dead." Their faces light up with relief and joy. But then the chaplain continues: "The bad news is that he no longer exists."

I suspect that the most compelling reason that readers may have for resisting my claim that human persons who are distinct from human animals still die biological deaths is that the human animal can instantiate the same life processes before and after the person's death. This provides a stronger claim than fission does against the notion that persons die biological deaths; a human animal who was alive before the person's putative death can still be alive after that alleged death event. The fact that the person's human animal instantiates life processes before *and* after the person ceases to exist naturally leads one to say that the person did not die. While the original amoeba's living body is no more after fission, the person's living body continues when the person ceases at the onset of a persistent vegetative state.

To help readers resist the intuitive appeal of saying that in some cases where the living go out of existence, they do so without dying, consider that two objects can instantiate the same processes and properties. Imagine a bruise on your right elbow and thus also on your right arm. This is one bruise instantiated in two entities. If readers balk at there being but one bruise shared by two entities, they will not be able to draw the line at two bruises. For if there are two bruises, there are actually more. There would be a third bruise on your right side, a fourth on your torso, a fifth on your body, and so forth. So to avoid an explosion of bruises, it is more plausible to claim that two or more entities are instantiating one and the same bruise.

If your finger is bruised, so are you. You have the same bruise. If every part of your body but your finger is destroyed, then neither you nor your body still exists as reduced to the size of your finger. So you do not exist anymore and *a fortiori* are not instantiating any bruises. But your bruised finger still exists. Something analogous is true when the person ceases to exist due to the onset of a persistent vegetative state, but the animal continues to exist. My suspicion is that people are easily misled when there are two overlapping (part-sharing) entities, and one but not the other ceases to exist and to instantiate a shared property. The source of the error in the personal identity scenario is that two distinct but overlapping beings, a human person and a human animal, are instantiating the same biological property of life. When that property of being alive ceases to be instantiated in the person because the person is destroyed, the continued presence of the living animal mistakenly leads people to believe that the person has not died. However, just as the bruise that you share with your finger can survive your destruction, so can the life processes that the person shares with the animal survive the person's destruction. The posthumous presence

of your bruised finger is no reason to deny that you, the person, were earlier bruised and have ceased to be so. Likewise, the posthumous presence of life processes in the animal is no reason to deny that the person earlier instantiated such life processes and has ceased to do so.

The costs of equivocating about *death*

I have argued that embodied, living persons always die when they cease to exist. Failing to recognize this point will have some unwelcome consequences. First, real deaths, the loss of life-instantiating processes, will not be registered when persons cease to exist due to the loss of mental capacity. This is an error in ontology. Genuine biological deaths are occurrences that are not captured by accounts that claim that the deaths of persons are not biological deaths. Philosophers like McMahan and Baker, who understand the death of the person to mean just that someone has gone out of existence, fail to see that this going out of existence involves the person's ceasing to instantiate life processes and thus undergoing biological death.

To follow Baker and McMahan and employ two senses or definitions of *death*, one for persons and one for organisms, is also to fail to recognize that the person has died but has not ceased to exist in the two thought experiments: the cerebrum transplant and inorganic part replacement thought experiments, the bread and butter of PAPI, involve living beings' ceasing to instantiate life processes. Insisting that persons do not die biological deaths results in inaccurate descriptions, as the persons in these scenarios go from alive to not alive without ceasing to exist. This descriptive adequacy is forfeited when maintaining that persons can only cease to exist, but cannot die biological deaths. If the death of the person means her going out of existence, then a death that does not extinguish the person cannot be accommodated. Ultimately, the person whose cerebrum is transplanted or whose body parts are replaced will die—which is to say, cease to instantiate life processes—without going out of existence. Defining *death* as merely ceasing to exist does not capture the biological deaths of the entities that continue to exist posthumously in these two thought experiments.

Allowing instead that the same person dies in both senses—*death*₁ as ceasing to instantiate life processes and *death*₂ as ceasing to exist—will have the confusing consequence that persons have to die two simultaneous or consecutive deaths. The two deaths are simultaneous when the person's ceasing to instantiate life processes and ceasing to exist occur together, as when someone is blown up. The two deaths are staggered, and the person dies twice, in thought experiments where, for example, the cerebrum is removed and then soon afterward dropped and destroyed.¹⁸ The person will have died a biological death (*death*₁) when she is so reduced in size that she can no longer instantiate life processes. The person will have died an existential death (*death*₂) when the impact of the drop destroys her capacity to produce consciousness. The prospect of dying two simultaneous or consecutive deaths can be

¹⁸ The person will also die two deaths in Chiong's scenario [31], discussed in footnote 13.

avoided if the meaning of *death* is restricted to its first sense as ceasing to instantiate life processes, and the second sense of *death* as ceasing to exist is discarded.

I think introducing a second sense of *death*, apart from creating theoretical confusion, will also serve to sow suspicion among lay people, who may wonder if the equivocation is being used to coopt the significance of *death* understood in the traditional sense of ceasing to instantiate life processes. Death is final, and important death behaviors commence upon its determination [36]. Since the biological/medical paradigm is organism death, PAPI will seem to be illicitly appropriating the discourse of death, which will be resisted given the presence of life processes in grandma's body in the intensive care unit. Admittedly, my reformulation—in which persons die biological deaths when they go out of existence irrespective of their animal's remaining alive and instantiating life processes—means that the whole-brain criterion and associated tests will not be diagnostically useful in determining the death of the *person* at bedside, because the human organism's brainstem will continue to work after the human person dies. The person shares the brain of the animal, and so the still-functioning animal brainstem cannot be expected to indicate the death of the person—the person has just ceased to instantiate the brainstem's properties and functions. However, my account does permit the bedside claim that grandma's life processes have ceased. It follows from grandma's ceasing to exist (as the person, not the animal) that she can no longer instantiate life processes. Doctors and philosophers can say to skeptics of the account of death offered by PAPI that grandma has stopped breathing, her brain is no longer controlling her respiration and heart rate, she is no longer integrating life processes, and so forth.¹⁹ This just follows from grandma's dying and ceasing to exist. Since she does not exist, she no longer has a brain that modulates her respiration and heart rate, even though the brain that once did so for her person continues to do so for her organism.²⁰

Uriah Burke points out a further problem if there are two types of death [37]. Too many things will be able to die. Shoes can go out of existence, but surely they do not die. So if the defenders of PAPI introduce a second sense of *death*, it is incumbent on them to give an account that clarifies which of the many things that can go out of existence can also die. They must qualify and restrict the second sense of *death* to, perhaps, thinking beings. So dying would not literally mean “a being's going out of existence”; rather, it would mean “a *thinking* being's going out of existence.” That definition might have to be qualified further if one resists the idea of saying that artificially intelligent robots have died after their capacities for thought are “deleted.” So it might be said that only thinkers who overlap and share parts with organisms can go out of existence in a way that counts as dying.

It will become apparent in the next section that matters get even more complicated if one possesses a soul which enables one to exist posthumously. Death cannot

¹⁹ While I do not expect that this paper will be abridged and turned into a brochure to be given out to relatives of patients in persistent vegetative states or irreversible comas, nevertheless, it allows PAPI to say that grandma has ceased to do all the things (i.e., instantiate life processes) that the skeptics of higher-brain death insist are constitutive of life.

²⁰ Recall that I am using *body*, *animal*, and *organism* interchangeably.

be defined as going out of existence if the ensouled continue to exist in hell, purgatory, or heaven or, as depicted in popular culture, proceed to hover over the living.

Animals as parts of persons and persons as parts of animals

There are so-called compound dualists like Richard Swinburne [38] who view persons as body–soul composites. The body is literally a part of the person.²¹ On this view, animals are parts of persons. Having a living material part (body) and an immaterial part (soul) means a person dies when the body dies as the ensouled person then ceases to instantiate life processes.

It is quite tricky to determine when properties of parts are also properties of the whole. Sometimes to ascribe the properties of the parts to the whole will be an informal fallacy of composition. If my kidney weighs five ounces, I do not also weigh five ounces. However, if my body is my *maximal* material part, then it seems safe to ascribe many of its material properties to me. I do not know the general principle for avoiding the fallacy of composition, but I suspect that if my maximal physical part has certain physical properties, such as weighing two hundred pounds or being alive, then I have those properties as well, for I have no other physical properties instantiated in a part external to my living, two-hundred-pound body. So if my body dies, then I—the body–soul composite who has no other physical properties than those of my body—have also died. But unlike my body’s material properties, I have temporal properties that are not exhausted by my body’s temporal properties; so it would not be accurate to say that since my body has no future after its destruction, I have no such future. Thus if my body dies, I die. But I do not cease to exist, given that I retain my soul as my only part.²²

There is one psychological approach to personal identity that understands persons as proper parts of animals. McMahan [41] and then later Derek Parfit [42] argue that persons are roughly brain-sized.²³ Their motivation for this claim is that persons consist of just those parts that are directly involved in the production of thought. They stress that having such little persons avoids many of Olson’s [6] animalist critiques of the spatially coincident person and animal both being thinkers. Since McMahan and Parfit’s brain-sized persons do not share the living animal’s body, they are not alive in a biological sense. Thus such small persons cannot die biological deaths, but can only cease to exist. However, if organs such as the brain are alive and do die, then such small people will both die and go out of existence.

I think that there are good reasons to deny that organs and tissues literally die. It is best to paraphrase such talk by saying that organs and tissues have living cells and

²¹ The language of *pure dualism* and *compound dualism* is borrowed from Olson [39].

²² So-called survivalist accounts of hylomorphism will reach the same conclusion as compound dualists; see David Hershenov and Rose Hershenov [40, pp. 225–229].

²³ Hud Hudson and Clint Dowland also defend the embodied mind view that persons are found beneath the skin composed of the parts of the central nervous system directly involved in the production of thought [43, 44].

that if too many of their living cells die, they will be prevented from accomplishing certain functions. This form of paraphrase avoids having two different senses of life ending with death. Cells and organs are alive in the same way. They are independent, self-maintaining, metabolizing, living entities that satisfy the same definition of life. But organs and tissue are not alive in the same manner as individual cells and multicellular organisms. The parts of organs and tissues are not coordinated in such a way as to keep that organ or tissue alive as a whole [6, p. 130]. An organism is “a complex macromolecular system that behaves as a unit and is capable of replication through the conversion of materials and energies derived from the environment through a self-controlled interface or boundary” [45, p. 61]. Organs and tissues, even when detached and sustained by equipment, are unlike the human *organism* in that they do not behave as a unit and do not have a unified boundary. Unlike organisms, they do not grow themselves or maintain themselves. Any teleological properties that they do have they get from their roles as parts in an organism.

The individual cells of an organ are alive and can die—they metabolize, grow, and operate as distinct units. Multicellular organisms that have organs as parts are alive and can die. But organs and tissues cannot die. Organs and tissues are not literally alive, and any account of the death of a tissue culture or some tissue in my thigh, for example, will be rather unprincipled. Does the tissue still live when all but one of its constituent cells have died? It would be odd for a tissue to still be alive if only the smallest fraction of its cells are. The tissue could not become reduced in size to the one living cell as things cannot become identical to their parts. Would the tissue die in degrees as more and more of its cells died? That sounds absurd. Once one extends life beyond the cells of a tissue to encompass the tissue itself, the tissue’s lack of the integration and self-maintenance characteristic of cells and organisms brings to bear puzzles that are best avoided by denying that multicellular tissues and organs are alive. Suffice it to say that the death of too many of a tissue’s living cells will render it dysfunctional and ultimately eliminate it.

Pure dualism and the death of the soul?

Pure dualists maintain that we are identical to our soul, rather than a compound of soul and body. Souls do not die. Even if pure dualists are right and we persons are indeed souls without bodies as proper parts [46, 47],²⁴ a second sense of death is not needed. The soul cannot die as it is not alive. The death of someone who is just a soul should really be understood as the death of her body, and not her literal death as such.

Nevertheless, if readers insist that it is too revisionary to declare that fully immaterial persons who are identical to their souls do not die, then death cannot mean that persons cease to exist—as maintained by McMahan, Green, and Wikler in the opening quotations—as the immaterial persons exist posthumously. How then should one define the death of a soul? Well, I would first caution readers against defining an

²⁴ Olson claims that Descartes is read both ways, but more often as a pure dualist [39].

ensouled person's death as the soul's ceasing to be related to its body. This construes death a relation between the person's body and soul. If the person as conceived by the pure dualist could truly die, then death cannot be defined merely as the soul's ceasing to be related to its body, for the loss of such body–soul integration would make body swaps between two souls into a form of death. Think of Locke's description of soul swapping between a prince and a cobbler [23, p. 340] or popular movies like *Freaky Friday*, in which Jamie Lee Curtis's soul transfers into the body of her teenage daughter and vice versa. Such soul swaps satisfy a definition of death as the soul's ceasing to be related to its body. But such examples surely do not meet the popular conception of death.

Soul death would have to be defined as the cessation of a relation to a body that was instantiating life processes and no longer does. So death for a soul would occur when the soul ceases to interact with the body after the body dies. Defining *death* in terms of bodily death would not be circular as there are two senses of *death*. But it would be unwelcome as it invites an equivocation in the very definition of a person's death. If one goes down this route, then one will be stuck with three senses of *death*. Not only would there now be a death in the first sense of the soul's departing and a death in the second sense of the animal body's dying, but there would also perhaps be a third sense of death as nonexistence if the soul is destroyed.²⁵

Conclusion

Persons whose body parts are parts of their person—as theorized by Locke, Green and Wikler, Baker, Shoemaker, and the like—can die biologically defined deaths that meet the whole-brain death criterion. Surprisingly, the same is true for persons construed as a compound of soul and body. So if ensouled persons can die without going out of existence, this offers further reason not to define the death of persons as their ceasing to exist, rather than their ceasing to instantiate life processes. Thus persons whose bodies overlap (i.e., share parts) do not need a second definition or criterion for death. Indeed, complications and confusion arise if these are introduced. Only a second criterion for nonexistence is required. Since I have argued that organs are not literally alive, unlike cells and organisms, they cannot literally die, and so a new criterion of death is not needed even for embodied mind theorists like McMahan and Parfit who posit brain-sized persons. I have also argued that souls do not die, though they can cease to be related to bodies when the latter die. But if readers insist that immaterial human persons as conceived by pure dualists do die, then the definition of death need only be tweaked to include a relation between the person and the cessation of the functions of the organism *as a whole*. However, such a tweak introduces an unwelcome ambiguity into the meaning of death and so is best avoided.

²⁵ There is a minority Christian tradition that posits the annihilation of some souls in lieu of suffering for an eternity in Hell.

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