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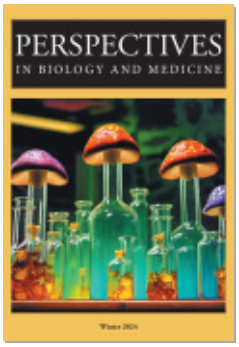

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Perspectives in Biology and Medicine, Volume 67, Number 1, Winter 2024, pp. 1-21 (Article)

Published by Johns Hopkins University Press
DOI: https://doi.org/10.1353/pbm.2024.a919707

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ABSTRACT According to the mainstream bioethical stance, death constitutes the termination of an organism. This essay argues that such an understanding of death is inappropriate in the usual context of determining death, since it also has a social bearing. There are two reasons to justify this argument. First, the mainstream bioethical definition generates an organismal superposition challenge, according to which a given patient in a single physiological state might be both alive and dead, like Schrödinger's cat. Therefore, there is no clear answer as to whether organ retrieval from a brain-dead patient is an act of killing or not. Second, when combined with the dead donor rule, the mainstream position in the definition of death might lead to ethically unacceptable verdicts, since there is a discrepancy between terminating an organism and depriving someone of moral status.

In the definition of death debate, one of the most important concepts identifies death with the extinction of an individual organism (Bernat, Culver, and Gert 1981; Capron and Kass 1977; Moschella 2016b; President's Council 2008;

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This research was funded by the National Science Centre, Poland Sonata research grant (Grant No. 2020/39/D/HS1/02907) to Piotr Grzegorz Nowak. The author is grateful to Michael Cholbi, Angelika Mus-Nowak, Aeddan Shaw, Travis Timmerman, Arthuro Artur Vllahiu, and two anonymous reviewers.

Perspectives in Biology and Medicine, volume 67, number 1 (winter 2024): 1–21.

Shewmon 2001). In his influential article "The Brain and Somatic Integration: Insights into the Standard Biological Rationale for Equating 'Brain Death' with Death," Alan Shewmon (2001) states that this concept represents the standard or official view. He argues that it was officially endorsed by most of the influential authors in the debate, as well as by institutional bodies like the President's Commission and the Swedish Committee (Shewmon 2001). Many authors tend to agree with Shewmon's identification of the "standard" concept, even though they do not agree on whether this view implies that brain-dead patients are alive or dead (Condic 2016; DeGrazia 2021; Nair-Collins 2017; President's Council 2008). Moreover, many authors in the debate agree that the presence or absence of organismal status should inform, to a significant extent, our conduct toward the patient (Bernat 2019; Huang and Bernat 2019; McGee, Gardiner, and Jansen 2023; Moschella 2016b; Nguyen 2018, Omelianchuk 2021). In recent years, the ongoing debate has shown that the standard concept faces severe difficulties (Lizza 2018; McMahan 2002). In this essay, I discuss two such difficulties and consider one alternative option to proceed within medical practice.

The first difficulty is what I propose to call the "organismal superposition challenge." This is a consequence of the predominant view in the philosophy of biology, namely organismal pluralism (Nowak and Stencel 2022; Stencel and Proszewska 2018). The second difficulty concerns the fact that, although it is plausible that the extinction of an organism is associated with the cessation of moral status in many cases, there might be some circumstances when these two events diverge. Finally, the alternative option for proceeding within medical practice defines death as "an irreversible loss of A's moral status (whatever A is precisely)" (Nowak 2023). In the concluding sections, I also analyze nihilism as a challenge to this kind of moral definition of death.

The Organismal Superposition Challenge

The currently dominant view in theoretical biology highlights the fact that there are numerous equally true concepts of an organism—roughly speaking, about 26 (Clarke 2010; Nowak and Stencel 2022). Biologists mainly use these concepts to provide individualizations—namely, to distinguish individual organisms from their part on the one hand, and to form the population of organisms on the other (Pepper and Herron 2008). Theoretical biologists typically do not concern themselves with demarcating the moment of death—that is, the moment of transition of an organism (which as an organism is always a cohesive and integrated entity) to something that is no longer an organism. Yet even though theoretical biologists do not use the biological concept of an organism to delineate the border between the living and the dead, this branch of science implies where the border lies. Since there are multiple biologically valid concepts of an organism, if we ask whether a given entity is alive or dead as an organism, we receive contradictory results, yet all are valid. How is this possible?

It is best to look at some examples of biologically valid concepts of an organism and their implications. First, according to the developmental concept of an organism, "the individual animal . . . is understood to be that which proceeds from ovum to ovum" (Nowak and Stencel 2022, 137). Second, the functional developmental concept also perceives an organism as an entity that comes from a fertilized egg. However, that is not all that matters, since one needs to be functionally integrated to be an individual organism (Stencel and Proszewska 2018). Third, according to the physiological-immunological concept, the origin of the elements that constitute an organism does not matter itself. What matters is the lack of hostile immunological reactions between components of an organism and the presence of such reactions between elements of an organism and everything external to it (Pradeu 2016). Fourth, according to the classic evolutionary concept, an individual organism is capable of reproduction and participates through this reproduction in the process of evolution by natural selection (Godfrey-Smith 2013; Griesemer 2001). Note that this list of equally valid biological concepts of an organism within biology is hardly comprehensive. I merely utilize these examples to present what I call the "organismal superposition challenge."

Given these exemplary concepts, let us consider some concrete cases. According to concept 1, "all aphids that grow in a given meadow from an unfertilized egg should be considered one organism, albeit one that is physically disconnected across the meadow" (Nowak and Stencel 2022, 138). Therefore, the individual organism remains alive even if a ladybug hunts and kills some aphids. However, according to concept 2, a meadow of aphids does not constitute an individual organism since there is a lack of the functional integration of aphids; it is instead a single aphid which constitutes an organism, and this organism ceases to exist when a ladybug successfully hunts it. Yet again, if we take a look at concept 3, we can observe that there would be no hostile immunological interactions between aphids that come from a single egg, so the whole meadow constitutes a single organism as according to concept 1. Now, suppose that the aphids in the field become incapable of reproduction due to the effects of some pesticide, even though they are still moving and eating. In that case, according to concept 4, they have ceased to be organisms despite still being single living organisms according to concepts 1 and 3. According to concept 2, there is also a diversity of living organisms in the meadow.

The upshot is that the same body at the stated time, in the stated condition, might be both alive and dead according to the most recent biological theory, since all the abovementioned approaches are valid on the grounds of general biology. In medical ethics, we do not care too much about aphids, but the problem is that biology as a science applies to all organisms, including patients in an ICU. In particular, given organismal superposition, brain-dead patients are alive and dead simultaneously. They might be considered dead from a functional developmental standpoint (assuming they lack proper integration (Moschella 2016b), but

they are seen as alive based on the physiological-immunological concept because they can still combat infections (Nowak and Stencel 2022). If we aim to abide by the dead donor rule (Robertson 1999) and the prohibition of murder, defined as causing biological death, then organ retrieval from brain-dead patients becomes problematic, as it appears to contradict both rules and yet does not.

The simplest way to address the organismal superposition issue is to dismiss it as a problem. One can argue that the superposition problem arises from confusion between an organism and a living organism. If we acknowledge this distinction, then the theory of death pertains to living organisms, making the debate about various organism concepts and the alleged superposition problem irrelevant. This argument is reinforced by the fact that paleontologists study dead organisms, which are said to exist.

Yet I do not think dead organisms exist, and I do not think that such an attempt to dismiss the organismal superposition problem is successful. A detailed argument for the failure of such a strategy can be found elsewhere (Nowak and Stencel 2022), and I will not reiterate it here. Let me make only one note: one of the dictionary's meanings of *death* is a "permanent end of something." Given this meaning, which is the most suitable for the interpretation of the paleontologist perspective, strictly speaking the phrase "dead organism" means "the former organism," and talk of "dead organisms" concerns the remains of organisms.

To challenge the organismal superposition problem, one can also note that the difference between life and death differs from that of being an organism and no longer being one. Whatever kind of biological entity the brain-dead body (or any other body) might be, we want to know if it is alive or dead. Moreover, considering the life versus death status per se generates no parallel problem to organismal superposition. In grappling with the death definition, many authors have tried to pinpoint the necessary and sufficient conditions for being an individual organism. But such attempts have been misguided and they should rather refer to the distinction between life and death as such.

This argument has merit because biologists sometimes use the terms *alive* and *dead* independently of organism criteria, for instance, when discussing viruses or defining death for astrological purposes (Koonin and Starokadomskyy 2016). In such cases, organismal status does not inform their discussions. We also use *dead* in a similar way when, for example, a dentist says, "This tooth is dead." It is a simple distinction of whether something is made of living material. When we say a whole human body is dead in this context, we are not concerned with its organismal status but rather that it's no longer made of living material.

While theoretically sound in biology, this argument is not helpful for the bioethical definition of death debate. It is clear that brain-dead patients have living material in their bodies, as organ transplantation shows. The real debate is whether they are a cohesive biological entity and, likely, whether they are considered organisms.

A third way to respond to the organismal superposition challenge is by reference to Michael B. Green and Daniel Wikler's (1980) observation that "to state that an ailing patient, Jones, is still alive, is in fact to make two claims; the second of which is usually taken for granted. One is that the patient is alive. The other is that the patient is (remains) Jones" (117–18). One could elaborate on this thought in a way that is not strictly faithful to the intentions of Green and Wikler, claiming that in *essence* we are organisms, but not in any biologically valid sense. Rather, we are organisms only in a way that yields reasonable individualizations when assessed through the lens of personal identity theory.

One could, for example, claim that since the immunological view implies that organisms can persist as decapitated headless bodies (Nowak and Stencel 2022), and since it seems to be a reductio, we are organisms in a different sense than the immunological one. This strategy might be enticing, but to be successful it would need to provide some criteria as to whether a given concept of an organism provides appropriate individualization or not. Given the convincing arguments from Shewmon (2001) undermining such a role for the brain, the criterion would need to be different than Olson's (1999) choice of the brain stem as an integrator of the body. I plan to investigate this strategy fully in a future research project.

Yet another way to refute organismal superposition is simply to assume that it is not an ontological problem but only an epistemological one, as Ellen Clarke (2013) has claimed, and I will focus on that strategy here.

Suppose that it is not the case that there is a plurality of equally valid biological concepts of an organism and the associated plurality in biological deaths, but rather that the multiplicity of views on the nature of an organism is a hallmark of the early stage of biological investigations regarding the nature of organisms. If this is the case, then a brain-dead patient is not simultaneously alive and dead as the organismal superposition problem suggests. Instead, the patient is either alive *or* dead, and we just do not know their status pending the establishment of a biological consensus. Given such circumstances, one could argue that we should base our judgments about the organismal status of a brain-dead patient on the most justified concept of an organism and ignore the implications of other views as probably false.

The problem with such a stance is that it assumes we are able to select the most justified concept, even though biologists have reached no consensus in this regard. Moreover, as I have argued elsewhere (Nowak and Stencel 2022), many biological concepts—including the mainstream ones—have consequences that are ethically unacceptable.

For this reason, one could argue that a genuine concept of an organism and the associated notion of biological death has developed in the mainstream bioethical definition of death debate, rather than in theoretical biology. One might emphasize the fact that theoretical biology is more interested in the theory of the individuation of organisms than in differentiating between living and dead

organisms. For the sake of argument, I will assume that such a point is correct. Yet the problem is that I do not see a single most justified concept of an organism in the bioethical debate either as there are many concepts which all have some advantages and disadvantages (see Nowak and Stencel 2022, Huang and Bernat 2019, Moschella 2016a). Therefore, instead of arbitrarily choosing one of these concepts, I will briefly elaborate upon my own variant, which I believe performs best when confronted with different problematic cases. Later I will show how the discrepancy between the cessation of the moral status of a given entity and biological death might occur even under this most justified biological view on death, and I will explain why such a discrepancy is problematic.

The Most Favorable Concept of an Organism

In my view, the most convincing method to distinguish living organisms from dead ones involves four key concepts found in definitions from scholars in the brain death bioethics debate: autopoiesis, membrane, homeostasis, and entropy (Nair-Collins 2018a; Shewmon 1985, 2001). The four concepts discussed here were not arbitrarily devised by philosophers or bioethicists. Instead, they are integral to several subdisciplines within the natural sciences. This makes the approach outlined in this section particularly favorable, as it aligns closely with the principles of modern science.

Let us start with the concept of autopoiesis:

> an autopoietic system is organized (defined as a unity) as a network of processes of production (transformation and destruction) of components that produces the components that: (1) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (2) constitute it (the machine) as a concrete unity in the space in which they exist by specifying the topological domain of its realization as such a network. (Varela 1979, 13)

As I understand this notion, a given entity is an autopoietic system if it can regenerate itself in at least slightly adverse surroundings that cause damage to that entity. At first glance, this is a good criterion to delineate living organisms. By this criterion, if you bruise your finger, the healing process immediately begins, rebuilding your body as a concrete unity in space. This capacity defines an individual living organism, distinguishing it from inanimate objects like stones.

However, the concept of an organism will prove problematic if we stop at the notion of autopoiesis. How are we to understand the topological borders of an individual system in the above quotation? Are you a unique autopoietic system, or are you made of autopoietic systems which collaborate with one another (Luisi 2003)? Or maybe you are not a single autopoietic system, but instead your family is such a system, of which you are only one element (Luhmann 1995; Mingers

1994). To avoid such difficulties, one needs to add the proviso that to be a living organism one needs to be such an autopoietic system, one that "topologically demarcate[s] 'self' from 'non-self' by a continuous, closed membrane, across which matter is exchanged bidirectionally with the environment" (Shewmon 2001, 461). If one adds such a criterion, one can say that your family is not a living organism, nor is your liver. Instead, it is your body that is a living organism in the correct sense. Yet there is still a problem: some may argue that it is better to view the entire Earth's biosphere, enclosed by the atmosphere, as a single living organism, with us as just one part.

To overcome these theoretical challenges, we must consider the two other concepts I mentioned earlier. One must say that a living organism is an autopoietic system with a membrane, capable of maintaining homeostasis, defined as stable extracellular (for multicellular organisms) or intracellular (for unicellular organisms) fluid conditions. Since homeostasis cannot be measured even in theory, one must also refer to the notion of entropy, which measures the dispersion of energy at a stated temperature, and whose function, in the case of living organisms, is inversely related to homeostasis (Lambert 2002; Nair-Collins 2018a). In other words, if entropy increases in an organism, homeostasis is disturbed and so the organism is closer to death.

Thus, we have reached a definition of an organism that establishes its boundaries and distinguishes it from the deceased: an individual organism is a kind of autopoietic system, such that it has a closed membrane and such as that it is capable of maintaining homeostasis, which means that it is capable of accumulating energy within its membrane at a stated temperature.

Given this definition, one further aspect should be pinpointed. Namely, what does it mean that an entity must be capable of maintaining homeostasis for it to be an organism? Does it mean it should do this without help from its surroundings? Obviously not. All living organisms obtain energy with some help from their surroundings—for example, by digesting food that comes from outside. In other words, organisms fight against the increase in their inner entropy; after each period of growth in their internal entropy, they decrease its level by utilizing some external energy source (Nair-Collins 2018a). Therefore, it is best to understand the capacity to maintain homeostasis as the presence of any antientropic forces within a given organism. Under such an understanding, the death of an organism would occur when an autopoietic system with a closed membrane is unable to produce any forces limiting the growth of entropy within the system.

Testing the Most Favorable Concept

Let us now examine this concept of an organism and the associated definition of death. Is this concept ad hoc? Is it only applicable to the bioethical definition of death? The first merit of the concept in question is that the answer to both

questions is "no." This concept applies not only to assessing brain-dead patients but also to making relevant distinctions for theoretical biologists. For instance, in the case of aphids in a meadow, an individual organism is enclosed by a single membrane. It remains an individual aphid as long as it can maintain homeostasis, even when exposed to infertility-causing pesticides.

Now, let us consider how this concept fares when applied to challenging cases from the brain-death literature. Does it align with our intuitive distinctions between who is alive and who is dead? For example, is a ventilator-dependent patient with a functioning brain but a severed spinal cord considered a living organism according to our concept (Shewmon 2010)? The answer is "yes," because some antientropic forces continue within the patient's body, which can be still seen as an autopoietic system with a closed membrane. This is supported by the patient's ability to maintain body temperature better than inanimate objects like a cup of tea (Shewmon 2001).

How about a conscious hemophiliac patient on a remote island with a severed artery and no medical assistance (Nowak 2023)? The patient bleeds, loses energy, and their body's entropy increases, but the patient remains conscious for a while during the bleeding. As I have argued elsewhere, some concepts of death based on the notion of entropy have an unwelcome consequence—namely, they imply that hemophiliac patients, due to the inevitable increase in entropy, are considered dead even though they are conscious (Miller and Truog 2012; Nair-Collins 2018a; Nowak 2023). With my version of the concept, we can highlight that certain antientropic forces are active in the patient's body, even as entropy increases. These forces cannot halt entropy's rise entirely, but they do slow it down. Hence, these patients are alive despite being in an irreversible decline. This is evidenced by the fact that the bodily temperature of such a patient would decrease, all other things being equal, more slowly than the temperature of some inanimate objects.

For the moment, let me assume that the concept of an organism proposed here is the best one can do if one wants to provide a biological way of differentiating the borders between organisms and dead material, especially in health care. It is not ad hoc, and it avoids some problematic conclusions, such as those claiming that the conscious patient is dead. However, we will soon see that even this best concept of an organism can hardly be adopted for social policy use.

To conclude this section, however, allow me to point out what are the implications of the most favorable concept of an organism for the case of the brain-dead patient. Such a patient has a closed membrane and, when medical aid is provided, maintains homeostasis within their body, their wounds heal, and they fight infections by means of the febrile response (Shewmon 2001). In a word, some antientropic forces are still acting within their bodies and therefore they are living organisms. Of course, to do all these things, the brain-dead need to function in a friendly environment, with access to a ventilator and nursing care. The distinction here is one of degree, not type. Our organisms also require supportive

environments, with variations based on individual characteristics. For example, patients with pacemakers cannot operate in strong magnetic fields, unlike those without pacemakers. However, typically, we do not deny the status of living organisms to those with pacemakers.

The Moral Sense of Death

Suppose for a moment we have a clear and scientifically correct answer whether the brain-dead patient is alive or dead as an organism. Suppose that the concept of an organism formulated above is true, and that all other concepts are false. Since the concept implies that brain-dead patients are still functioning organisms, the act of organ retrieval from such an organism is an act of killing, because it causes such patients to stop functioning as autopoietic systems. Adopting such a conclusion does not necessarily mean that organ retrieval from brain-dead patients has to be banned, although some bioethicists would undoubtedly be sympathetic to such an idea (see, for example, Nguyen 2016). Most bioethicists who believe that brain death is not a genuine death advocate a different option. They believe that some sort of lethal organ procurement from brain-dead patients is acceptable, provided that donors supply their informed consent for such a procedure (Miller and Truog 2012; Nair-Collins 2018b). According to these bioethicists, for such consent to be informed it would need to be based, among other things, on the recognition that brain death is not the death of an organism.

Yet I am skeptical about the idea that the information on the patient's organismal status is of pivotal interest to the patient or the proxy decision-maker. This skepticism might be supported by a recent empirical study conducted by Ivars Neiders and Vilius Dranseika (n.d.). If someone thinks that a patient's organismal status is essential for decision-making, that belief might be based on the faulty conflation of organismal life in the biological sense with something else that is more important. Such a conflation might be partly due to the inherent vagueness and inconsistency of terms like *organism* that are used in both ordinary parlance and scientific theories.

A crucial factor is something that I have termed elsewhere "life in a moral sense" (Nowak 2023; see also Veatch 2015). Elaborating on this idea, we can say that there is a sense in which death means the irreversible loss of the moral status of a given entity—for example, an individual human. It is a state where nothing can matter morally for the entity's own sake. (For an explication of the concept of moral status, see Clarke and Savulescu 2021; DeGrazia 2008, 2022; Jaworska and Tannenbaum 2014; Warren 1997.) Such an event might be independent of organismal death. I have argued that whether an entity is a person or an animal or some other creature, anything can matter morally for the entity's own sake only if the entity is capable of valuing things—that is, capable of having complex or primitive affections (Nowak forthcoming; see also Korsgaard 2018; Street 2010).

If this is the case, death in a moral sense is the state of the permanent incapacity to have any affective attitude. In other words, when one loses all their affective capacities, they cease to be an entity that might be directly benefited or harmed. If anything that happens to such an entity matters at all, it matters only indirectly, perhaps due to the importance of some affective attitudes of other living beings or past affections (Nowak n.d.). Given this view of death, we can say that brain death is an appropriate criterion of death because no affective capacities are preserved in the brain-dead body.

Regardless of whether this particular version of the moral theory of death is correct (Lizza 1993; Veatch 2015,), what I want to emphasize at this point is that any kind of moral concept of death is based directly on some theory of well-being, harm, and wrong, and therefore it can deliver direct conclusions regarding the moral assessment of some forms of human conduct, such as organ retrieval. But theoretical biology is uninterested in such moral categories. Therefore, it is strange to assume that considerations based on purely biological concepts such as an "organism" in the scientific sense could have any genuine importance for everyday decision-making (DeGrazia 2022). The only importance of organismal status in a scientific sense for practical decisions that I can see is its importance for the scientific conduct of biologists in their laboratories. For example, scientists leading biological experiments might have to decide whether to replace some of the dead organisms in their lab, and they can inform their supplier of this decision through a purely biological concept of an organism. Because the use of such a purely biological concept is very limited, we might think a commonsense notion would be more useful, but the everyday use of the term *organism* is vague and plagued with inconsistencies. Moreover, there is no guarantee that this sense of the term can serve the goal of providing morally sound distinctions.

As we will see in the next section, when it comes to bedside decisions, it is moral status, rather than the commonsense status of an organism—the status of an organism in the scientific sense or biological life in a simple meaning—that is essential. Naturally, the belief that moral status matters for each and every patient in an ICU cannot be taken for granted, and physicians should carefully assess each case individually. In order to respect autonomy, it is necessary to make sure that every patient in an ICU where artificial support systems such as ventilators are used is aware that death is usually determined using neurological criteria at such facility (Beauchamp and Childress 2019; Nair-Collins 2018b).

While providing such information to patients, one may disclose that death is ambiguous (Neiders and Dranseika n.d.). One of its meanings is a moral sense, in which death is a state from which the patient will never regain consciousness, including the capacity to feel, desire, or think. One could say that this meaning of death is, in fact, utilized in all practically important contexts of everyday life. However, outside of the ICU, there is usually no need for testing brain functions to confirm that one can no longer feel anything or have any desires and interests

since it is obvious that these capacities are lost in an inanimate body. Similar information on the meaning of *death* may also be provided when individuals visit the motor vehicles department and choose to donate their organs "after death" by checking a box.

If patients or their surrogate decision-makers insist that such a concept of death is not what matters to them, but rather whether the patient's body is still integrated—that is, whether it is still an organism—then, if the most favorable concept of an organism really is the only true biological concept, as I assumed for the sake of argument, physicians should inform them that the patient is alive in an organismal sense.

If moral status rather than organismal status is what really matters, then one might wonder why organismal status has been regarded as so important by participants in the definition of death since the early 1980s. This can be explained in part by the influence of scholars like Alexander Capron and Leon Kass, who had a substantial impact on theories about the definition of death, and whose ideas has a significant impact on the 1981President's Commission. Capron and Kass (1977) refer to the dying subject in a somewhat ambiguous way, variously as a "person," "human being," "human being as a whole," "living human organism," and "organism as a whole." On the one hand, they seem to claim that the dying subject is a person. Yet the interchangeable utilization of the abovementioned terms suggests that they tend to believe, in a manner akin to the animalists in the philosophical debate on personal identity (see Olson 1999), that the "human person" is coextensive with "human biological organism."

Perhaps due to the conflation of "human biological organism" with "human person," Capron and Kass claim that the public should be engaged in the projects of defining organismal death and the concept of an organism. However, if the term "human organism" is taken in its scientific sense, it is unclear why the public should be considered an authority on the meaning or the definition of the term. Such a meaning needs to be determined through analysis of theoretical biology, the science that deals with different kinds of biological entities, including organisms. The only plausible reason for involving the public in the debate is if we are working with the vague, commonsense meaning of *organism,* rather than its scientific sense. The fact that Capron and Kass use phrases like "person," "human being," "human being as a whole," "living human organism," and "organism as a whole" argue in favor of this interpretation, and perhaps their appeal to the public could be read as inviting people to add greater precision to the commonsense notion of an organism. However, the problem with reading their request in this manner is that the meaning of common parlance terms cannot be established or changed simply by engaging the public in a debate. Instead, it is determined by the way ordinary people use words. People can say that they have decided to change the meaning of some term, but until such a declaration is supported by the establishment of a new linguistic practice in a society, no change in the meaning of a term will appear.

The Discrepancy Between Organismal Status and Moral Status

I will now return to what I have termed "the most favorable concept of an organism" in order to show how even the best way of grasping the essence of organismal life in a scientific sense might lead to morally wrong decisions. Suppose that we were not only to use the biological concept elaborated above in scientific practice but also in our regular life to determine the life or death status of patients. This section will analyze some such cases.

While the end of an organism often aligns with the end of moral status, there can be situations where these events differ. Here is a selection of examples: (1) someone destroys the cerebral hemispheres of an adult; (2) someone suffocates an anencephalic newborn; and (3) someone "transfers" the mental content from a patient with a destroyed brainstem and preserved cerebral hemispheres to a computer brain surrogate located in a humanoid robot and then suffocates the body with the destroyed brainstem.

Although I will not discuss all of the controversies related to these examples, I think there are good reasons to believe that what happens in the first case constitutes an example of causing death, where death is understood as a cessation of moral status. As far as we know, it is impossible for a human organism to be conscious or have any kind of affective attitude without functioning cerebral hemispheres. Simultaneously, from the point of view of most concepts of an organism, including the one I have proposed, it is not a case of killing an organism. Patients with destroyed cerebral hemispheres can function as organisms, provided they are appropriately fed and cared for.

What happens in the second case is not causing death in the sense of depriving one of moral status (Jaworska and Tannenbaum 2014). At the same time, it is considered from most biological perspectives to be causing death in the sense of destroying an organism. Anencephalic newborns lack cerebral hemispheres, so they are incapable of being conscious, even though they are functioning organisms, capable of digesting food and sometimes breathing on their own.

Regarding the third case, from the point of view of biological theories of an organism, one needs to interpret it only as a case of causing death, since robots are not entities that can maintain homeostasis and cannot be alive in a biological sense. In contrast, given the theory of death as a cessation of moral status, one can perceive this as a borderline case. There are some reasons to perceive the whole procedure as an attempt to rescue a patient's life, yet it is not clear if this attempt will succeed since the continuity of the material basis of mental content is interrupted (McMahan 2002).

The upshot is that even if one could overcome the organismal superposition problem by showing that there is a single privileged concept of an organism that serves as a benchmark for determining the organismal status of different patients, we should not care too much about such a verdict. Instead, we should rather be

interested in the patient's possession of moral status. Furthermore, if you prefer, you do not have to call the event of the irreversible loss of A's moral status "death." Yet, as evidenced by the cases above, one would do wrong if they were to insist that what matters for the sake of conduct towards patients is their organismal status instead of their moral status. For example, one might wrongly accuse someone of murder when they suffocate an anencephalic newborn but not one who destroys the cerebral hemispheres of another.

Note also that the analysis based on the three above cases can also be read as an argument against the view which assumes that human organisms overlap with human persons. Yet since the issue of personal identity is a distinct philosophical problem, I will not develop this line of thought further in this essay.

Overcoming the Organismal Superposition Problem

Before I move to the nihilist challenge against the moral concept of death, let me say a word about the idea that the most favorable concept of an organism overcomes the organismal superposition problem. One might easily reach such a conclusion, given how the concept performs in the tests analyzed earlier. Above, I assumed that the most favorable concept was indeed the only valid one in order to demonstrate that even if we manage to resolve the "organismal superposition challenge," we still encounter the issue of a discrepancy between moral and organismal status. But can one seriously believe that the most favorable concept is the only genuine concept of an organism?

Note that the argument I have made for the supremacy of the most favorable concept of an organism is in fact very limited. I merely show that there are some vague, implicit, and unanalyzed intuitions in common parlance as to what counts as a living organism and what does not, and that the most favorable concept of an organism utilizes some scientific notions (such as autopoiesis, homeostasis, membrane, and entropy) and squares best with these intuitions, enabling biologists to utilize this concept for their purposes. So the most favorable concept might serve as a bridge between the commonsense vague notion of an organism and a more precise understanding of this term in science.

But I do not think this is enough to argue that this concept is the only correct one, and that all other concepts, despite being well-grounded in different subdisciplines of biology, are false. Usually when we consider whether concepts in theoretical science refer to genuinely existing entities, we do not consider linguistic intuitions specific for common parlance to be a proper criterion. For example, when we consider whether the concept of "DNA," which is present in biology, refers to some really existing entities in the world, we do not care if the scientific concept of DNA squares well with laypeople's intuitions about what counts as DNA, even though there are undoubtedly some such intuitions.

Instead, when we consider whether the term "DNA" refers to some real entity, we ask if this term is an element of our best scientific theories, and we do

not care about the linguistic intuitions of ordinary people regarding DNA. The same is true for other phenomena referred to in science. The best scientific theories are those which provide the best explanations of what scientists observe—that is, they have the highest predictive force, are simple, elegant, cohesive with what science generally says about the world, and are not ad hoc (Douven 2011; Nair-Collins 2018a). I assume that the concept of DNA in biology is an element of such a best theory, and for this reason we can assume that DNA chains exist.

Is the most favorable concept of an organism and the associated concept of death an element of the best scientific theory, superseding or negating other concepts of an organism, such as the developmental, evolutionary, or immunological? I do not think this is the case. The developmental, evolutionary, and immunological concepts of an organism are typically used by biologists in their theorizing, experimenting, and predicting. The fact that scientists use the concept of an organism in these senses argues against excluding these concepts from the theoretical apparatus of our best scientific theories. For this reason, at the end of the day, the organismal superposition problem is not overcome with the most favorable concept of an organism. There is no reason to deny the fact that the death of an organism can be conceived of in terms used in evolutionary or immunological biology and so on.

The Nihilist Challenge

It seems that the organismal superposition problem cannot be overcome. Moreover, the discrepancy between moral status and organismal status shows that what matters is death in a moral sense. But is the moral sense of death an unproblematic one? In this section, I would like to consider what I term the "nihilist challenge."

Benjamin Franklin once famously said that "Nothing can be said to be certain except death and taxes." Yet assuming that the organismal superposition problem is irresolvable, we can say that one cannot be exactly sure when one dies biologically. Does an organism die at the moment the heart stops, at the moment the brain stops functioning, or at some other point? As we can see, such uncertainty might be problematic, especially when conjoined with a ban on killing and a need for transplantable organs. However, given the biological perspective, we can be at least sure that a wholly decayed body is dead according to all concepts of an organism that are included in biological theory. Yet if we adopt the moral view on death and believe that one dies in a socially important sense when one irreversibly loses one's moral status, then whether one is alive and is an entity that can die depends on whether there is such a thing as moral status. In other words, whether one is alive and can die depends on whether anything can morally matter. The threat is that if the whole of morality is an illusion (Mackie 1977), and thus nothing can morally matter for anyone's sake, no one could ever be alive, and no one could ever die in a socially important sense.

Can I offer a substantial rebuttal of the nihilist challenge? Only partially. I have proposed defining death as an irreversible loss of moral status, conceiving moral status as the thing that makes the acts done to the entity and the events that happen to that entity morally important for this entity's own sake (Clarke and Savulescu 2021, Jaworska and Tannenbaum 2014; Nowak 2018, 2023, n.d.). In other words, if some entity has moral status, there are direct moral obligations toward that entity. For example, I am obliged to avoid torturing Adam, and if I breach this obligation, I do something that, first and foremost, is directly wrong to Adam and only in the second place is wrong to other people.

Perhaps no moral obligations really exist, as the nihilist assumes. But might it be the case that the thing I have wrongly believed grounds direct obligations is still crucial in some sense for the determination of life and death? I assume that such a scenario is plausible. I have argued that what grounds moral status is the capacity to have any kind of affective attitudes. Could it be the case that there is no moral obligation to an entity that is capable of feeling the word as pleasant or painful, that is capable of desiring some things, or that is capable of endorsing some of their pleasures, pains, and desires and of revolting against others? In other words, could it be the case that there are no moral obligations towards an entity that is capable of some kind of affection?

Even if there are no moral duties—including duties to entities capable of some kind of affection—the difference between affective beings and all those utterly incapable of affection might be still defended as the border between life and death. That is the case because only beings capable of affection can have interests (DeGrazia 2008, 2022). Even if their interests are not morally relevant, the difference between having interests and being incapable of having any might be said to literally be a matter of life and death.

Given the nihilist challenge, perhaps the moral view on death cannot be defended, yet a similar view can be adopted, at least when it comes to the scope of classification. I would call this similar view an interest-based theory of death: according to it, we can define death as the moment when an entity ceases to have its own interests. In other words, death is understood as a state when nothing can harm or benefit the subject. Assuming that all entities capable of having affective attitudes, and only such entities can have interests, the classifications made according to the interest-based account of death would overlap with classifications based on the moral view on death (DeGrazia 2008). The only difference would be that the interests do not ground moral obligations if nihilism is true.

Divergent Views on Moral Status

As I have argued earlier, it is better to conceive death and life in a practically relevant sense in terms of the capacity to have interests, rather than in organismal terms. Let us now move to another problem. Let us assume, through a

stipulation, that the nihilist challenge has not only been partially resolved but completely addressed: that there is some genuine normativity, with direct moral obligations towards some beings. In particular, let us assume that there are direct obligations towards patients, so patients have moral status and are therefore alive in the moral sense of this word. Yet why should we believe moral status and life in a moral sense are based on the capacity to have interests, understood as a capacity to affective attitudes?

Is there really a single best theory of moral status, or might it be that multiple true theories of moral status give rise to something like the moral superposition problem? Moreover, assuming there is a single true theory of moral status, why should one believe it is the one presented here? These questions were addressed in my previous work (Nowak n.d.), but let me briefly summarize these arguments in this regard.

When addressing these worries, the first thing to note is that the plurality of views on moral status among the public and ethicists is structurally very different than the plurality of the concepts of an organism in theoretical biology. When we look at this difference, we realize that the theory of death as an irreversible loss of moral status is not endangered by anything akin to the organismal superposition problem.

What is the difference? The organismal superposition problem is generated by biology having different subdisciplines, such as immunology, developmental biology, evolutionary biology, and so on. Evolutionary biologists investigate organisms in a sense which is informed by the theory of evolution, while immunologists conceive of organisms according to their own terms. There are many ways to be an individual organism, and each way is characteristic of a given subdiscipline of biology and is equally real. The majority of theoretical biologists accept organismal pluralism (Pepper and Herron 2008).

Now consider an ethical controversy regarding moral status. Three philosophers meet for lunch: a utilitarian who believes that the criterion for moral status is sentience, and that all sentient creatures matter equally from the moral point of view; a Kantian ethicist, who believes that the criterion for moral status is rationality; and a Catholic nun who thinks that the human soul, conceived in Aristotelian-Thomistic terms, is the criterion for moral standing. The utilitarian chooses a vegetable salad, while the others chicken tikka masala. In such a situation, would the philosophers think about moral status in a way that is structurally similar to the way biologists think about the status of an organism—namely, that there are different equally valid ways of having moral status? Probably not. A genuine utilitarian might object to the meat-based dish on the grounds that factory farming is associated with animal suffering, and that the suffering of every being matters morally. The Kantian would say that only rationality makes one have moral status, so one cannot do anything morally wrong to chickens who are not rational, and the nun might object that one cannot do anything morally wrong to creatures who do not have human souls.

The nature of the plurality of views on moral status among ethicists and ordinary people is different from the plurality of concepts of an organism in theoretical biology. Most ethicists and members of the public implicitly believe that there is only one true criterion of moral status, even though they disagree on which it is, and these different views on moral status are in genuine tension. If the majority are correct, there is no moral superposition problem but—at worst—an epistemological problem of determining which of the many views of moral status is the most justified and plausibly true.

So, assuming that the majority of ethicists and the public are right in their belief that there is a single true theory of moral status, how should we deal with uncertainty regarding the issue of which view of moral status is true? Although I have argued for this more extensively elsewhere (Nowak n.d.), let me supply at least some reasons to believe the most justified theory is that moral status rests on the capacity to have affective attitudes.

The first merit of the theory is that it does not arbitrarily posit the existence of supernatural facts, such as transcendental values accessible through intuition. Second, it is compatible with what science tells us about the world—namely, that science acknowledges the existence of creatures with affective attitudes and at least in part explains the origin of affective capacities such as emotionality, sentience, the capability to have desires, and so on. It is also compatible with science to see affective attitudes as an activity of valuation, especially when it to comes to declarations like "I want this! I do not want that!" (Street 2006). Third, the theory is pretty universal: in contrast to Veatch's (2015) moral view on death, it applies to all entities capable of affection, not only to people. Fourth, even those who do not believe in genuine normativity or the existence of moral status as the basis for genuine moral duties can acknowledge the importance of the criterion of moral status proposed in this essay. While meta-ethical error theorists do not believe that there are any moral duties incumbent on any being, they do think that our capacity to make ethical judgments is based on our affective capacities. According to them, we just project our desires on to the world and mistakenly take them to be objective and real ethical values (Garner 2010; Joyce 2007). Emotivists and expressivists state that the function of the whole ethical talk is to express noncognitive affective states, not to describe the truth (Blackburn 2009; Stevenson 1937). So even though there is no true or false theory of moral status according to them, the capacity to have affective attitudes is of crucial importance for ethics: there would be no ethics at all without creatures expressing their affective attitudes.

Moreover, error theorists and expressivists do not deny that there are interests. For error theorists, interests are responsible for our mistaken belief in the existence of values. For expressivists and emotivists, the whole ethics is a way of expressing our interests. Error theorists, emotivists, and expressivists agree that interests are a matter of having affective attitudes. They can accept that death is the permanent

incapacity of being harmed or benefited, although they would not associate this phenomenon with the loss of moral status. In other words, they would probably favor accepting the modest version of my theory, the interest-based account of death, which is clean of any genuinely normative accretions.

Conclusion

In this essay, I have argued that the biological concept of death cannot be adopted for social purposes because of two problems. The first is the organismal superposition challenge, according to which a given patient in a stated condition might be both alive and dead as an organism. The second is the problem of the discrepancy between organismal and moral status: it might be the case that one ceases to be an organism without losing one's moral standing, or to have been an organism but never had moral status. Given that death is chiefly determined for social reasons related to human conduct, we should not be interested in the patient's organismal status but in the patient's moral standing. I have also addressed the nihilist challenge to the moral concept of death, claiming that if there is no morality at all, as the nihilist would claim, we can adopt an interest-based concept of death instead of a moral one. Finally, as a last word, let me emphasize the implications of the moral and interest-based concept of death for the case of the brain-dead patient: since any kind of affection is impossible without a functioning brain, at least according to what we currently know from neuroscience, brain-dead patients are indeed dead.

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