

## Scientific Contribution

### **An Animalist's Critique of Jeff McMahan's Embodied Mind Account of Identity**

Yuichi MINEMURA

Department of Philosophy, The State University of New York at Buffalo

Email: [yuichi.minemura@gmail.com](mailto:yuichi.minemura@gmail.com)

**Abstract:** In the traditional psychological criterion, psychological continuity is essential for us to survive. Jeff McMahan establishes 'the Embodied Mind Account of Identity', critically examining the traditional psychological account. According to the Embodied Mind Account of Identity, the preservation of the capacity for consciousness created by certain areas of the cerebrum is indicative of the essence of human existence. A conscious being with that capacity is essential for us, while an organism losing it and surviving with only biological continuity is irrelevant to our lives. In this article, I refute McMahan's Embodied Mind Account of Identity with the theory of Animalism. I affirm that we are essentially organisms sustained by life processing. The preservation of cerebral function is irrelevant to the essence of our existence. I reveal that the heart, lungs, and brain stem governing biological function produce the capacity for consciousness. Furthermore, I prove that the brain stem substitutes for cerebral function by means of its plasticity when it is young. In opposition to McMahan's argument, the cerebrum does not produce the capacity for consciousness solely. Instead, the body organs, the brain stem, as well as the cerebrum are all involved in the production of consciousness. As a result, there is no conscious being, produced by certain parts of the cerebrum, which is essential for our existence. I assert that we are organisms persisting by means of life processing and retaining the capacity for consciousness while preserving that biological function. The capacity for consciousness is merely one of the functions that we possess during the process of biological development and consciousness is not a factor determining our substantial existence.

**Keywords:** The Embodied Mind Account of Identity, Animalism, the Cerebrum, an Organism, Life Processing

## 1. Introduction

Higher consciousness is very crucial for our lives. We generally presume that functions of higher consciousness that include memory and personhood are essential to our existence. Suppose the case in which a brain and a body are separated by a medical surgery. Both the brain and body continue to be alive with certain medical procedures and external medical devices. A popular assumption is that we survive in the brain rather than the body. This results from a tremendous impact of conscious experience that our brain create in our lives. We are inclined to assume that our conscious and dynamic lives are essential to us rather than our unconscious and stagnate lives. As a result, the psychological criterion emphasizing the psychological continuity for our persistence in existence has been influential. Traditionally, the psychological criterion claims that we must preserve psychological continuity and personhood in order to survive. Psychological continuity and personhood generally denote processes of thought, self-awareness, and rationality. However, the traditional psychological criterion fails to establish what is the essential element enabling us to become a being with higher psychological continuity and personhood. Even if there were such an agreement, there would still be great difficulty in determining that a patient losing psychological continuity and personhood ceases to exist while she preserves the capacity for consciousness.

Jeff McMahan critically examines the traditional psychological criterion and proposes his own psychological account. McMahan argues that it is not the capacity for psychological continuity and personhood but the capacity for consciousness created by certain parts of the cerebrum that is essential to our existence. This capacity for consciousness implies a mind that is substantial to us. McMahan's psychological account is referred to as 'the Embodied Mind Account of Identity'. In this account, we persist as a result of the preservation of consciousness that certain parts of the cerebrum exemplify.<sup>1</sup> In McMahan's view, a patient losing higher cognitive function does not cease to exist while preserving consciousness. A patient ceases to exist only when she irreversibly loses the capacity for consciousness as a result of the destruction of certain areas in the cerebrum creating it. McMahan's account is more of a rigorous psychological theory than the traditional psychological accounts. This is because his account requires the irreversible cessation of the capacity for consciousness that is the primitive psychological function in order to determine that we no longer survive. McMahan proposes the higher brain criterion as the standard determining our death. In the higher brain criterion, we die when the cerebrum, the higher brain, irreversibly ceases to function in creating the capacity for consciousness. Furthermore, McMahan examines our existence and death more philosophically than the other bioethicists and physicians

supporting the psychological criterion and the higher brain criterion.<sup>2</sup> As a result, it is crucial to analyze whether McMahan's psychological account is well-grounded by analytic rigor without a conceptual problem to reveal our life and death.

In this article, I examine McMahan's Embodied Mind Account of Identity with my own account of Animalism through the analysis of the beginning and ending of our lives. Animalism denotes that we are essentially organisms that survive with biological continuity.<sup>3</sup> I argue that the preservation of cerebral function is not relevant to the essence of our existence. I reveal that the heart, lungs, and brain stem governing biological function are the foundation producing consciousness. Furthermore, I prove that the brain stem substitutes for the function of the cerebrum by means of its plasticity when it is young. In opposition to McMahan's account, I affirm that the cerebrum does not alone produce the capacity for consciousness. As a result, McMahan's psychological account presuming certain parts of the cerebrum to create the capacity for consciousness and to be essential for our existence is not plausible. I assert that we are organisms persisting by means of life processing that the brain and other organs work to retain and attain the capacity for consciousness while preserving that biological function. The capacity for consciousness is merely one of the functions that we possess during the process of biological development and is not a decisive factor determining the type of our substantial existence.

## **2. The Traditional Psychological Criterion and the Embodied Mind Account of Identity**

In the traditional psychological criterion, a person ceases to exist when losing psychological continuity that is essential to her. Psychological continuity diminishes gradually in the case of Alzheimer's disease. As a result, it is difficult to determine the point at which an Alzheimer's patient loses psychological continuity and ceases to exist. Furthermore, an Alzheimer's patient preserves the capacity for consciousness even after losing psychological continuity until the very final stages of the disease. Nevertheless, the traditional psychological criterion regards an Alzheimer's patient as ceasing to exist when her psychological continuity is deemed to no longer function. However, this is contrary to our intuition that many Alzheimer's patients believe that they are alive, even after losing psychological continuity.<sup>4</sup> A patient generally takes interest in herself, while she retains consciousness. It is likely that a patient does not cease to exist as long as she preserves the capacity for consciousness in opposition to the notion of the traditional psychological criterion. In McMahan's account, an Alzheimer's patient preserving the capacity for consciousness survives. Understanding the existence of an Alzheimer's patient in

accordance with McMahan's view is more plausible than in the traditional psychological criterion in that it is not opposed to our intuition regarding human existence and it is useful for saving the life of the patient retaining the capacity for consciousness. McMahan develops his psychological account by modifying the inadequacies of the traditional psychological account in order not to be contrary to our intuition and to be applied in a practical medical setting.

While critically examining the traditional psychological criterion to reveal the type of mental function that is essential to us, McMahan refers to the wide version as well as the narrow version in that criterion in order to reinforce his psychological account.<sup>5</sup> The wide version describes a psychological connection of an entity with any cause preserving its personal identity. Any cause of the wide version indicates any material that allows for the same psychological connection. In this version, the original person and its replica are one and the same, as a result of sharing a psychological connection. On the other hand, the narrow version denotes the psychological connection of an entity with only a normal cause retaining the essence of our existence. The normal cause of a human being in the psychological criterion is the material and functional continuity of the relevant areas of the same brain creating consciousness. Since the replica does not possess the continuity of the same brain with the original person, this version indicates that they are different individuals.

It appears that the narrow version corresponds more closely to our understanding of the essence of existence than that of the wide version of the criterion. This is because we are inclined to hold that the continuity of our own brain is crucial for our existence. McMahan proposes a thought experiment of the suicide mission to verify the reason by which the narrow version is more persuasive than the wide version.<sup>6</sup> Suppose that a soldier must carry out a military mission involving death. The soldier is allowed to have a replica of himself to complete the mission. If the soldier is given the choice to perform the mission himself or to assign it to his replica, he will have the replica perform the mission. The soldier has more egoistic concern for himself than for a replica not possessing continued functioning of the brain. In a qualitative sense, the replica possesses the same processes of consciousness and thought as the original. However, a replica is essentially different from the original in that it does not possess the same brain. Our egoistic concern is dedicated much less to the replica than it is to ourselves. Egoistic concern is a type of concern that we apply more to ourselves than anything else.<sup>7</sup> In contrast, the replica possesses a quasi-consciousness and quasi-memory as a result of the production of those functions by means of the duplicated brain. The quasi-consciousness and quasi-memory are essentially different from the original consciousness and memory generated by our own brain. McMahan asserts

that we are not egoistically concerned with the replica, as we are with ourselves. We might be concerned with the being who possesses a quasi-consciousness and quasi-memory, as we would be with someone who is very close to us. Nevertheless, we will not be concerned with that being in a way that we desperately wish to save our own lives. Following the narrow version in the traditional psychological criterion, McMahan argues that the continued material and functioning of the brain generating consciousness is essential to human existence. We survive with the capacity for consciousness produced by our own brain functioning, while not losing egoistic concern for ourselves.

In sum, McMahan contends that continuity of the physical bases of the brain generating psychological connections is essential for our existence, when critically analyzing the traditional psychological criterion and partially endorsing some ideas of that criterion. The foundation for our egoistic concern is the preservation of the capacity for consciousness that the continued material and function of our own brain create. In McMahan's view, consciousness is equivalent to a mind. The physical basis of the brain generates a mind that is substantial to us. The continued existence and functioning of the same brain that does not comprise quasi-consciousness or a quasi-mind is required for retaining the essence of our existence. We survive as long as our own brain possesses the capacity to generate consciousness. McMahan names his own psychological theory 'the Embodied Mind Account of Identity'.<sup>8</sup>

### **3. Beginning of Our Lives**

In the Embodied Mind Account of Identity, we do not exist until our organisms begin to possess the capacity for consciousness. Something biological exists before our organisms have the capacity for consciousness that the cerebrum creates. A conscious being appears with the capacity for consciousness when certain areas in the cerebrum produce that capacity.<sup>9</sup> An organism and a conscious being are different entities and coexist in the same body. An early fetus is merely an organism that is essentially different from a conscious being. When a fetal organism obtains the capacity for consciousness as it grows, it causes a conscious being that is considered essential to our existence. In the Embodied Mind Account of Identity, the early abortion does not harm anyone because there is yet no conscious being. The early abortion merely prevents someone from beginning to exist. The Embodied Mind Account of Identity estimates that the capacity for consciousness appears between the twentieth and the twenty-eighth weeks of gestation.<sup>10</sup> The early abortion prior to the twentieth week of gestation destroys something that is a human organism, but it does not kill anyone.

Contrary to the Embodied Mind Account of Identity, critics claim that an early fetus is not yet a conscious being, but has a potential to become a conscious being when the fetus grows and develops its cerebrum.<sup>11</sup> As a result, they insist that abortion should be prohibited in that it destroys that potential. McMahan argues for the implausibility of this type of critique that states the early fetus has the potential to become a conscious being.<sup>12</sup> If the early fetus has that potential, the fetus and the conscious being would be the same individual. The identity-preserving potential of the fetus would allow it to be the conscious being. However, the early fetus does not possess the identity potential to become the conscious being in accordance with the Embodied Mind Account of Identity. The fetus merely has the nonidentity potential to generate the conscious being. The nonidentity potential that the early fetus possesses causally gives rise to the conscious being. The fetal organism does not cease to exist after causally producing the conscious being, coexisting with that being in the same body. The human organism and the conscious being are essentially different entities.

McMahan gives an example of the relation between a lump of bronze and a statue in order to clarify the non-identical relation between the organism and the person.<sup>13</sup> A lump of bronze has the potential to causally give rise to a statue when it is formed in a certain manner. However, the statue is a new individual entity that is essentially different from the lump of bronze. The lump of bronze does not cease to exist when the statue is shaped from the same matter and begins to exist as a new entity. The lump of bronze and the statue coexist in the same body, while remaining different entities. As a result, the potential for the lump of bronze to causally give rise to the statue is non-identical in the Embodied Mind Account of Identity. Furthermore, McMahan provides the imagined scenario of the lump of bronze and the statue in order to endorse his view that an organism and a conscious being are different entities.<sup>14</sup> In that scenario, the statue is hollowed out with the removal of the interior lump. Removing the interior does not affect the existence of the statue. The statue as well as the lump of bronze continues to exist without affecting the existence of each other after the removal is made. Suppose that we destroy the lump and put alternative iron ore into the statue. The statue of bronze remains without the original lump. As a result, McMahan claims that the statue and the lump of bronze are different entities and coexist while united. Similarly, McMahan argues that the early embryo has the nonidentity potential that causally produces the conscious being. The fetal organism does not cease to exist after the conscious being begins to appear as a result of the creation of the capacity for consciousness by means of cerebral function. The organism and the conscious being are different entities that coexist. They are never identical to each other.

In McMahan's view, a fetal organism causally generates a new entity, 'a conscious being', that is non-identical to itself when the capacity for consciousness develops. The organism and the conscious being that are not identical coexist in the same body. I argue that McMahan's view of an early fetus is not plausible in explaining the development of a human being. I refute this view because an early fetus that is alive with life processing does not produce any new entity (e.g., a conscious being) merely by acquiring consciousness. McMahan's account implies that the quantity of a certain being that exists in a living body varies depending on whether the capacity for consciousness appears in it. This view is contrary to the biological principle stating that only one being must exist in a living body. I contend that it is likely that we are an organism and no other being coexists with us in a living body when examining human existence in accordance with biology.<sup>15</sup> Understanding our existence in this manner does not contradict our intuition. Contrary to McMahan, I argue that an early fetus becomes a conscious being while it is the same entity, an organism, by attaining the capacity for consciousness and growing by virtue of the preservation of life processing. In order to verify the essence of our existence, our lives persist by means of biological continuity in accordance with the principle of Animalism. We are essentially organisms and obtain the property of consciousness while the brain advances in the process of biological development. The attainment of consciousness does not causally give rise to a conscious being. Consciousness is merely one of the properties that an organism is endowed with and is not an essential property for human existence.

As an animalist, I hold that our lives start with the appearance of life processing and persist while it is preserved. Following modern biology, we begin to be alive from the stage of a zygote that preserves life processing such as metabolism and its own boundary at the conception. The zygote is a unique composition of the gametes, sperm and egg. The zygote possesses its own membrane after a sperm and an egg fuse together. The chemical modifications of the zona pellucida surrounding the zygote prevent further binding of sperm to its surface. The zygote establishes genetic information resulting in subsequent embryonic development. This zygote is materially and behaviorally different from sperm or egg and is a new entity that preserves the organismal property. I assert that the zygote is the beginning of a human being that is an organism.<sup>16</sup> The zygote, a human organism, is distinct from a mere collection of cells in that it acts in a coordinated manner to enable interaction among human cells, tissues, and organs. The zygote has the identity potential to become a fetus, a newborn, and a conscious being in the process of its own development with life processing. We begin to exist from the stage of the zygote by means of the preservation of life processing. McMahan argues that a conscious being appears with the attainment of the capacity for consciousness and we are identical to that being rather than

a human organism. However, that argument is contrary to the principles of biology in that it indicates that we are not an organism. I affirm that it is plausible to recognize that we are essentially an organism persisting by virtue of life processing from the stage of the zygote.

Furthermore, I argue that we cannot examine the relation between an organism and a conscious being by referring to the relation between the lump of bronze and the statue. Those relations are entirely different. McMahan introduces the hypothetical case in which the statue remains after the internal bronze is hollowed and the ore is added to it. The statue persists by means of the other material than the lump of bronze. As a result, McMahan holds that the lump of bronze and the statue are different entities persisting respectively and coexist while combined. However, I argue that this relation of the lump of bronze and statue is not applied to that of the organism and the conscious being. Suppose that we attempt to apply McMahan's imagined scenario to a certain person. Her internal organs are removed from her body. This scenario presumes that the removed organs and her conscious being would continue to exist in the same manner as the lump of bronze and the statue. Contrary to the presumption of the scenario, I hold that the conscious being no longer survives once the internal organs that work for retaining life processing are removed. The primary internal organs (e.g., the heart, lungs, and brain) play a great role in preserving life processing. When these organs are taken out of a certain person, what remains is no longer a conscious being but merely a corpse without signs of life. In opposition to McMahan's argument, I assert that a conscious being ceases to exist after the removal of those vital organs. The relation between the lump and statue is not comparable to that between the organism and the conscious being as a result of a faulty analogy.

Contrary to my critique, McMahan would argue that if the cerebrum remains in a human being while other internal organs (e.g., the heart, lungs, and brain stem) are taken out of the body, a conscious being survives with the capacity for consciousness that the cerebrum produces although her organism is dead. In the Embodied Mind Account of Identity, a conscious being persists by means of the preservation of the cerebrum, regardless of whether or not the organismal body survives. As a result, McMahan would affirm that the example of the lump of bronze and the statue is representative of the relation between the organism and the conscious being that coexist and do not affect the existence of each other. Since McMahan believes that certain areas in the cerebrum directly produce a conscious being that is essential to us, such an argument from McMahan regarding the persistence of the conscious being not relying upon the organismal property is easily ascertained. If McMahan attempts to refute my critique in this manner, I subsequently assert that certain regions of the cerebrum do not function to produce

consciousness alone. The production of consciousness results from the interaction among the heart, lungs, brain stem, and cerebrum. Biological function such as circulation, respiration, and metabolism occurring by means of these internal organs is the foundation producing the capacity for consciousness. As a result, the conscious being will never survive without these internal organs sustaining life processing. It is crucial to understand that the creation of consciousness is associated with the biological continuity that is essential to the life of an organism. Since biological function is required for producing consciousness, there is no conscious being that persists without the biological property. In opposition to McMahan's view, a conscious being is the entity that an organism becomes in a certain time during the process of biological development. There is no other entity 'a conscious being' that is essentially different from an organism. There is only an organism that persists with life processing from the stage of the zygote and possesses the property of consciousness in the process of biological development.

#### **4. The Ending of Our Lives**

In the Embodied Mind Account of Identity, we persist while certain areas in the cerebrum preserve the capacity for consciousness. We cease to exist when irreversibly losing that capacity. A patient in a persistent vegetative state (PVS) no longer exists in that account. PVS is the condition in which a patient's cerebrum irreversibly ceases to function while spontaneous respiration and heartbeat continue to work in her body as a result of the preservation of the intact brain stem.<sup>17</sup> A PVS patient is no longer a conscious being as a consequence of the destruction of the cerebrum governing the capacity for consciousness. McMahan asserts that we do not have to wait for the destruction of the whole brain to determine the irreversible loss of the capacity for consciousness.<sup>18</sup> Although our organisms are alive with biological function, we cease to exist as a result of the irreversible loss of the cerebrum. The lives of our organisms are not crucial because we are not identical with them.

In McMahan's view, we are conscious beings that are constituted by the capacity for consciousness. We are distinct from our organisms and our persistent conditions are different. As a result, there are two types of death that correspond to the end of the conscious being as well as that of the organism.<sup>19</sup> The irreversible destruction of the areas of the brain that generate consciousness results in the death of the conscious being. These areas of the brain are confined to the cortex or other parts of the cerebral hemispheres. On the other hand, the irreversible cessation of integrated functioning denotes the death of the organism. As mentioned previously, the death of the organism is irrelevant to us because we are not identical to our organisms in the context of the Embodied Mind Account of

Identity. Consequently, we do not have to determine precisely when the death of the organism occurs. Instead, we are concerned only with the death of the conscious being that is identical to us. We cease to exist and die when losing the capacity for consciousness as a result of the destruction of the areas of the cerebrum generating it. It is true that, strictly speaking, death is biological. However, we are often willing to accept the idea that we practically die as a result of the loss of the parts of the cerebrum creating the capacity for consciousness.<sup>20</sup> McMahan asserts that the extended sense of death is justified with the irreversible cessation of the capacity for consciousness. He endorses the higher brain criterion that aims to determine our death by reason of the destruction of certain areas in the cerebrum generating consciousness.

In the Embodied Mind Account of Identity, we no longer exist in PVS. A patient in a PVS is merely an organism with irreversible loss of the capacity for consciousness. McMahan argues that a patient in a PVS does not possess an interest to live as a result of the absence of consciousness. He claims that a mere organism with irreversible loss of consciousness is similar to a dead body because both of them are merely the physical remains of a once conscious being.<sup>21</sup> For McMahan, whether a patient in a PVS is alive with spontaneous breathing and heartbeat is irrelevant to her life in that she has irreversibly lost the capacity for consciousness as well as an interest to live, both of which are fundamental to preserving her existence. Contrary to McMahan's view, I argue that a patient in a PVS possesses an interest to live as long as she preserves biological function. The preservation of the capacity for consciousness is not a necessary condition that allows a certain being to possess an interest to live. From the animalistic perspective, I assert that a patient in a PVS is an organism retaining an interest to live while continuing to engage in life processing that includes spontaneous breathing, heartbeat, and metabolism. If the patient loses all the interest to live, those types of biological function would entirely disappear from her body. Biological function remaining in the patient in a PVS indicates that it benefits her organismal life and she maintains an interest to live.<sup>22</sup> I do not deny that once we possess a capacity for consciousness, our interest to live enormously increases by fulfilling the further active pursuit of that interest with the capacity for consciousness. It is true that this capacity plays a great role in our lives, as McMahan and other proponents of the psychological account claim.<sup>23</sup> However, that capacity is not a required factor allowing a certain being to preserve an interest to live. The capacity for consciousness is a sufficient condition enabling the being to satisfy its own interest to live. Biological continuity is essential to our existence as a result of the fact that the preservation of biological function allows us to possess an interest to live even after we no longer possess

the capacity for consciousness. When we persist through biological continuity, such as life processing, an interest to live remains in us.

Furthermore, McMahan argues that an anencephalic infant does not retain an interest to live in that it has no capacity for consciousness in the same way as a patient in a PVS. An anencephalic infant lacks cerebral hemispheres but possesses a brain stem as a result of a cephalic disorder during embryonic development.<sup>24</sup> The anencephalic infant preserves biological function that an ordinary infant possesses. McMahan argues that the anencephalic infant is a human organism, but its life is not crucial for us because it lacks any capacity for consciousness that is essential to our existence. In the Embodied Mind Account of Identity, we are minds and are not identical with our organisms. The anencephalic infant is essentially different from us because it retains no capacity to possess a mind.<sup>25</sup> McMahan argues that the anencephalic infant does not have an interest to live because it has no capacity for consciousness as he states for the case of the patient in a PVS. The anencephalic infant is never a conscious being, as opposed to the case of the patient in a PVS. The infant without cerebral hemispheres is entirely and merely an unoccupied organism with which a conscious being never coexists. As a result, there is no moral reason to sustain the life of the infant and treat it humanely. The infant without cerebral hemispheres is the being that is fundamentally different from us as a result of its inability to obtain consciousness in the Embodied Mind Account of Identity.

I propose two responses that refute McMahan's perspective on an infant without cerebral hemispheres. First, as mentioned previously, the capacity for consciousness is not required for a certain being to preserve an interest to live. Thus, I argue that the infant retaining no cerebral hemispheres has an interest to live, even without that capacity while maintaining biological function as a PVS patient does. As a result, it is plausible to save the life of that infant as we do for our own lives because all of us preserving life processing retain an interest to live. Secondly, in opposition to McMahan's view, I hold that it is not certain the infant without cerebral hemispheres possesses no capacity for consciousness and is merely an unoccupied organism. Consider the case in 1989 in which a hydranencephalic child was conscious and interactive with the surrounding environment.<sup>26</sup> Hydranencephaly is the disorder resulting from the absence of cerebral hemispheres that fluid-filled sacs replace.<sup>27</sup> In this specific case, there were two hydranencephalic children, a brother and sister, who were conscious and sociable. Dr. Gregory Holmes officially diagnosed these children with hydranencephaly at Boston Children's Hospital. Electroencephalograms (EEGs) proved that there was no electrocerebral activity in those patients. The doctor did not observe brain tissue in their meninges. The examination at the age of twenty-five months revealed that the brother had some vision, indicated by the fact

that he was attracted by light in his left eye. At the age of six, he began responding to visual threat of bright light by blinking and closing his eyes during the examination.<sup>28</sup> The sister possessed more cognitive abilities than her brother, but she suffered from more severe vision difficulties. The sister retained the ability to recognize certain people non-visually by the age of five. She relaxed and vocalized further when the more familiar person (e.g., her mother) would come to her during the examination of that age. At the age of twelve, the sister exhibited heightened feeling and emotion by smiling. She responded to different types of music as well. Specifically, the sister smiled and became more active with vocalizing and movement when her therapist began to sing 'Send in the Clowns'.<sup>29</sup> This case disproves that the cerebrum is required for consciousness.

McMahan would claim that this is merely one exceptional case that is contrary to the general case of the infant without cerebral hemispheres. The basis of this type of claim results from the fact that most infants without cerebral hemispheres possess no capacity for consciousness. However, a medically proven exception disproves a universally accepted rule that the cerebrum is necessary for consciousness.<sup>30</sup> The parents of these children nurtured them with great dedication while many parents of hydranencephalic children treat them with a certain sense of resignation, following the customary care for the child without cerebral hemispheres. The later report of this case concludes that certain plasticity of these hydranencephalic children likely enables the brain stem to assume certain cortical functions with their parent's dedicated care.<sup>31</sup> I argue that the younger brain possesses much plasticity. As well, there is as yet no medical consensus about the roles of the individual parts of the brain. Moreover, the brain stem facilitates in stimulating impulses to create the appearance of consciousness, instead of the cerebrum only.<sup>32</sup> In addition, there is a report that subcortical structures play a great role in producing cognitive function as well as consciousness, instead of the cerebrum only.<sup>33</sup> As a result, I hold that it is very difficult to determine that a fetus without cerebral hemispheres retains no capacity for consciousness because of its developmental plasticity and the function of the brain stem as well as the other parts in the brain that substitute for the cerebrum. In opposition to McMahan's argument, I assert that the production of the consciousness does not reside in certain areas of the cerebrum, but results from the interrelation of various parts of the brain and body organs. In consequence, there is no conscious being that exists in certain areas in the cerebrum and is essential for human existence. The ability to realize consciousness remains in an infant without cerebral hemispheres, even though it is small in comparison with that of a normal infant, when preserving other brain parts than the cerebrum as well as life processing by virtue of body organs. Furthermore, even if there is no hope for many infants that do not possess cerebral hemispheres to preserve the capacity

for consciousness, we can determine that they possess an interest to live if they are alive with biological function. In consequence, it is unethical to treat the infant without cerebral hemispheres inhumanely and to end her life in accordance with the Embodied Mind Account of Identity. The infant without cerebral hemispheres is not a fundamentally different type of being from us but is the same entity as we are, as all of us are organisms persisting by means of life processing.

McMahan's Embodied Mind Account of Identity is not persuasive in that it distinguishes between a conscious being and an organism, presuming the capacity for consciousness produced by certain regions in the cerebrum to be essential to our existence. However, I assert that our existence does not emanate from certain regions in the cerebrum. Our lives start from the zygote with life processing such as metabolism and circulation and persist by means of biological function. We are essentially organisms. There is no conscious being that differs from an organism. Consciousness is merely a function that we possess in the process of organismal development. The attainment of the capacity for consciousness does not produce any other entity (e.g., a conscious being) that is different from an organism in opposition to McMahan's view. As a result, two types of death (i.e., the death of a human organism as well as that of a conscious being) are not required. A sole standard of death works thoroughly when it determines the death of an organism in consequence of the irreversible cessation of life processing sustaining our lives as a whole. In addition, the heart, lungs, and brain stem governing biological function as well as the cerebrum play a vital role in creating the capacity for consciousness. Biological function is the foundation for the creation of consciousness and the preservation of that function is essential for our existence. Moreover, we must be concerned with the multiple roles of the brain stem and other parts of the brain substituting for cerebral function. While a certain entity is alive by means of biological function, such as life processing, especially when it is young, it is difficult to determine that she will not be able to possess consciousness by reason of the destruction of the cerebrum. That entity retains the capacity for consciousness with the other parts of the brain besides the cerebrum, by virtue of the plasticity of the brain while preserving life processing. In opposition to the Embodied Mind Account of Identity, I assert that certain regions in the cerebrum do not play a role in generating consciousness alone and are not essential for our existence. We are the organisms that continue to exist by means of life processing, regardless of whether we possess no cerebrum (e.g., an embryo and an anencephalic child) or irreversible loss of cerebral function (e.g., a patient in a PVS). We persist through the preservation of life processing that is fundamental to our lives as well as the production of the capacity for consciousness.

## Notes

- <sup>1</sup> Jeff McMahan. *Ethics of Killing: Problems at the Margins of Life*, Oxford University Press, 2002, 67.
- <sup>2</sup> Robert M. Veatch and Stuart J. Youngner endorse the psychological account but do not attempt to establish the philosophical grounds that reveal the existence of the beginning and ending of our lives as McMahan does.
- <sup>3</sup> Eric T. Olson. *The Human Animal: Personal Identity without Psychology*. Oxford University Press, 1997, 16-17.
- <sup>4</sup> McMahan, *Ethics of Killing*, 64.
- <sup>5</sup> *Ibid.*, 56; Parfit, *Reason and Persons*, 208.
- <sup>6</sup> McMahan, *Ethics of Killing*, 57.
- <sup>7</sup> *Ibid.*, 58.
- <sup>8</sup> *Ibid.*, 68.
- <sup>9</sup> *Ibid.*, 267.
- <sup>10</sup> *Ibid.*, 277.
- <sup>11</sup> For instance, Massimo Reichlin endorses this type of critique. Refer to M. Reichlin, "The Argument from Potential: A Reappraisal," *Bioethics* II, 1997, 1-23
- <sup>12</sup> McMahan, *Ethics of Killing*, 303.
- <sup>13</sup> *Ibid.*, 304.
- <sup>14</sup> *Ibid.*, 305. This imagined scenario originally derives from Parfit's unpublished article "Persons, Bodies, and Human Beings".
- <sup>15</sup> Olson also contends that the psychological account would be contrary to biology in that it presumes that a conscious being different from an organism appears in a living body. Refer to E.T., Olson's "Was I Ever a Fetus?," *Philosophy and Phenomenological Research*, Vol. LVII, No. 1, 1997, 95-110
- <sup>16</sup> I attribute Maureen Condic's biological view of an organism here to defend my own animalistic account. Refer to M.L. Condic's "When Does Human Life Begin", White Paper, Vol. 1, 2008.
- <sup>17</sup> The Multi-Society Task Force on PVS, "Medical Aspects of the Persistent Vegetative State," *The New England Journal of Medicine*, 1994, 1499-1508.
- <sup>18</sup> McMahan, *Ethics of Killing*, 427.
- <sup>19</sup> *Ibid.*, 424.
- <sup>20</sup> *Ibid.*, 425.
- <sup>21</sup> *Ibid.*, 447.
- <sup>22</sup> My animalistic account here refers to Tom Reagan's interest principle. Refer to T. Reagan's *All That Dwell Therein: Animal Rights and Environmental Ethics*, University of California Press, 1982, 165-183.
- <sup>23</sup> McMahan, *Ethics of Killing*, 67; Robert M. Veatch, "The Whole-Brain-Oriented Concept of Death: An Outmoded Philosophical Foundation," *Journal of Thanatology* 3, 1975, 13-30.
- <sup>24</sup> Fredrick Adolf Paola, R. Walker, L.L. Nixon. *Medical Ethics and Humanities*, Jones and Bartlett Publishers, 2010, 277.
- <sup>25</sup> McMahan, *Ethics of Killing*, 451.
- <sup>26</sup> B. Baskerville, "Giving life 'glow'. Boy's life richer than predicted", *Free Lance-Star*, Fredericksburg, VA, 1989, 1.
- <sup>27</sup> David A. Nyberg, J. McGahan, D.H. Pretorius, and G. Pilu. *Diagnostic Imaging of Fetal Anomalies*, Lippincott Williams and Wilkins Publishers, 2002, 269.

<sup>28</sup> D. Alan Shewmon, G.L. Holmes, and P.A. Byrne, "Consciousness in Congenitally Decorticate Children: Developmental Vegetative State as Self-Fulfilling Prophecy", 1999, 365.

<sup>29</sup> Ibid., 367.

<sup>30</sup> D. Alan Shewmon, "Recovery from 'Brain Death': A Neurologist's Apologia", *Linacre Quarterly*, 1997, 58.

<sup>31</sup> D. Alan Shewmon and G.L. Holmes, "Brainstem plasticity in congenitally decerebrate children," *Brain and Development* 12(5), 1990, 664.

<sup>32</sup> Christopher Paris is one of the proponents for this critique. Refer to J. Paris, "Whole-Brain Death Reconsidered- Physiological Facts and Philosophy", *Journal of Medical Ethics* 9 (1), 1983, 32-37.

<sup>33</sup> Daniel M. Doleys. *Pain: Dynamics and Complexities*, Oxford University Press, 2014, 223-224.