

A THOMISTIC UNDERSTANDING OF HUMAN DEATH¹

Jason T. Eberl

INTRODUCTION

In 1968, with the published report of the Ad Hoc Committee of the Harvard Medical School,² many scholars and medical practitioners began to abandon the traditional cardio-pulmonary criterion for determining when a human being has died and to argue that, since the brain is the central organ which regulates the body's metabolic functions, irreversible cessation of the functioning of the brain as a whole—cerebral cortex, cerebellum, and brain stem—constitutes death. This “whole-brain” criterion of death is based on the understanding that a human organism cannot function *as a unified whole* without a functioning brain.³

The general acceptance of whole-brain death led to the postulation that perhaps not every part of the brain need irreversibly cease functioning in order for death to occur. Some scholars recognized that the so-called “higher-brain” functions of the cerebral cortex are responsible for the peculiarly human “personal” activities of conscious rational thought and volition. Hence, an argument is made that the death of a human *person* occurs when her cerebral cortex has been rendered irreversibly non-functional. This “higher-brain” concept of death is used as the basis to argue that patients in an irreversible *permanent vegetative state* [PVS] are no longer persons and thus should be considered dead.

In what follows, I will review higher-brain and whole-brain death from the standpoint of Thomas Aquinas's metaphysical understanding of human nature.⁴ I will critique arguments for higher-brain death being a proper interpretation of Aquinas's views and make a case for whole-

brain death to be compatible with Aquinas's account of human death given current biological data. I will begin with a brief account of what Aquinas explicitly states about death.

AQUINAS'S ACCOUNT OF HUMAN DEATH

Aquinas's account of a human being's death begins with his understanding of a rational soul⁵ as a human body's substantial form and its *unitive* function as such: "the body is united by the soul; a sign of which is that, when the soul departs, the body is dissolved."⁶ As the substantial form of a human body, a rational soul is the principle of the body's (1) existence (*esse*), (2) unified organic functioning, and (3) specific nature as a "human" body.⁷ Aquinas asserts (1) and (2) in the following passages:

"To live" is said in two ways. In one way, it is the very existence of a living thing, which results from a soul united to a body as form. In the other way, "to live" stands for the operation of life.⁸

"To live" stands for the operation of the soul which it produces in the heart insofar as it is a mover . . . and it infuses this life first in the heart, and afterwards in all the other parts [of the body].⁹

Aquinas understands a rational soul to be the principle of a human body's organic functioning and to operate by means of a *primary organ*.¹⁰ Aquinas, following Aristotle, identifies the primary organ as the heart; though contemporary science would identify it as the brain. Rendering a human body's primary organ as the brain, as opposed to Aquinas's explicit reference to the heart, is warranted by the criteria Aquinas gives for considering the heart as the primary organ. First, Aquinas describes the primary organ as that through which the soul "moves" or "operates" (*operatur*) the body's other parts. Second, he describes the primary organ as the "ruler" of the body's other parts in the sense that it *orders* them as a ruler orders a city through laws.¹¹ Third, he cites the *dependence* of the body's other parts upon the primary organ.¹² Now the brain, according to the contemporary understanding unknown to Aquinas,

functions as the source of operation for a body's vital autonomic and voluntary functions, regulates such functions and orders them to support the body's holistic-level existence and activity, and is the critical organ upon which the body's other vital organs—including the heart and lungs—depend for their functioning. I thus contend that the brain best satisfies Aquinas's description of the primary organ and thereby warrants substituting it for the heart in Aquinas's account.

Aquinas's two understandings of life entail two understandings of death:

Since death is the loss of life, it must be similarly distinguished so that it designates at one time the loss of that union by which a soul is united to a body as form, and at another time the loss of the operation of life.¹³

Though he separates two understandings of the term "death" with respect to human beings, Aquinas nevertheless considers them united in one and the same event. When the union of a rational soul and its body is dissolved, the dissolution of the body's unified organic functioning immediately follows:

If that which holds the individual contrary parts¹⁴ together is removed, they tend toward what is fitting to them according to nature, and thus the dissolution of the body is brought about.¹⁵

Aquinas understands death to occur because a pre-mortem human body is not *perfectly* informed by its rational soul. As a result, material defects can arise in the body that may make it unsuitable for being informed by a rational soul.¹⁶ Such defects result in a body's unsuitability for having a rational soul as its substantial form through its becoming unable to actualize the soul's vegetative capacities:

Although the soul, which is the cause of life, is incorruptible, yet the body, which receives life from the soul, is subject to change; and through this it withdraws from the disposition according to which it is suited for the reception of life. And thus the corruption of a human being occurs.¹⁷

Just as form does not come into matter unless the matter is made proper through the requisite dispositions, so, with the cessation of the requisite dispositions, a form cannot remain in the matter. And in this way the union of soul¹⁸ and body is dissolved; if natural heat and moisture and others factors of this sort [i.e., vital metabolic factors] are removed, insofar as by these a body is disposed toward reception of a soul.¹⁹

Aquinas thus links a human being's death, defined as a rational soul's separation from the body it informs, with the body's no longer being able to actualize the soul's vegetative capacities. The clinical criterion for determining the occurrence of this event is the loss of vital metabolic functioning as evidenced by, according to Aquinas, the cessation of respiratory activity:

If breath is subtracted, the union of soul²⁰ to body fails; not because breath is the medium [of the union], but because the disposition is removed through which the body is disposed toward this union.²¹

Having established Aquinas's explicit account of human death, I will now proceed to outline the contemporary debate between higher-brain and whole-brain death. Illuminating this debate is key insofar as a properly Thomistic account of human death may end up differing from Aquinas's explicit account as contemporary biological data is taken into account to determine when a human being's rational soul separates from her material body and the body corrupts.

HIGHER-BRAIN DEATH

The higher-brain concept of death defines the end of a human person's biological existence in terms of the loss of "the capacity to think, feel, be conscious and aware of other people."²² The criterion for establishing the loss of this capacity is the irreversible cessation of neocortical, i.e., higher-brain, functioning. Thus, Robert Veatch concludes, "a person should be considered dead when there is an irreversible loss of higher brain functions."²³ Some scholars advocate higher-brain death as a direct interpretation of Aquinas's understanding of human nature. Their argument is based upon the Thomistic principle that the presence of a specific type

of form in a particular material body can be asserted only by observation of the operations, or the inherent capacity for such operations, that are peculiar to that type of form in that body. Thus, since the form of a human being is a rational soul, the capacity for conscious rational thought being peculiar to that type of soul, only by observation of the capacity for conscious rational thought in a particular body can one assert that such a body is informed by a rational soul and thus constitutes a human being.

Aquinas claims that conscious rational thought does not occur by means of a bodily organ;²⁴ as, say, sight occurs by means of the eyes and visual cortex. However, Aquinas's claim does not preclude there being a *correlation* between rational activity and neural activity; as long as the correlation is not explained in terms of a relation of identity or reduction of the former to the latter.²⁵ Allowing such a correlation makes plausible the coherence of Aquinas's account of human nature with contemporary neurobiological data. Given the evident correlation between rational operation and cerebral functioning, it seems reasonable to conclude that irreversible loss of cerebral functioning implies the loss of the capacity for rational operation while a human being remains embodied. Due to this implication, it appears to follow that one cannot assert that a rational soul informs the body of a PVS patient.

Hence, D. Alan Shewmon, arguing from a Thomistic standpoint concludes that irreversible loss of cerebral functioning entails the loss of a rational soul as a body's substantial form.²⁶ This construal of death involves a reversal of the "succession of souls" Aquinas holds to occur in human embryogenesis.²⁷ A human being is informed by a rational soul until her body becomes structurally insufficient to support the soul's definitive rational capacities. While Aquinas understands the mind²⁸ not to function through a bodily organ, he nevertheless asserts that the operation of a rational soul's sensitive and imaginative capacities, which do function

through bodily organs, is required to provide the mind with its proper object of thought while a human being is embodied.²⁹ Thus, the loss of higher-brain functioning, which neurobiological evidence indicates is required for imaginative operation and is correlated with rational activity, precludes rational activity while the soul informs a material body.³⁰ At the loss of higher-brain functioning, then, it appears that a *substantial change* occurs in which the rational soul separates from the body and a sensitive or vegetative soul is instantiated as the body's substantial form—depending upon whether any sensitive capacities remain in the still living body. The body is thus no longer identical to the body which constituted the human being insofar as it has a different substantial form and a substance's persistent identity requires that it be informed by the same substantial form.³¹ The body continues to be informed by at least a vegetative soul until it reaches a point of deterioration where it can no longer structurally support vital metabolic functions. At this point, the vegetative soul is annihilated, the body ceases to exist as an organic whole, and it is reduced to a mere collection of basic elements.

Shewmon thus concludes:

The moment the brain cells in the hemispheres . . . become irreversibly damaged, the body is rendered incompatible with the human essence [i.e., rationality], forcing a substantial change. The spiritual [i.e., rational] soul departs and a vegetative soul is actualized, which had been virtually present all along in the vegetative aspects of the original human soul.³²

In summary, then, the minimum sufficient condition for the death of a person is the irreversible destruction of those parts of the brain necessary for the properly human functions of the spiritual [i.e., rational] soul, namely intellect and will.³³

E.-H. Kluge also argues for a higher-brain death interpretation of Aquinas, though he attempts to derive his conclusion directly from Aquinas's texts by noting passages in which Aquinas appears to separate the *personal* death of a human being, through the loss of rational capacities, from the *biological* death of a living body.³⁴ For example,

For existing things are prior to living things and living things to human beings, because, if human being is removed, it does not follow that animal is removed.³⁵

If the difference by which things are different from each other is removed, they remain the same; just as, if rationality were taken away from human being, he would remain among the number of irrational animals.³⁶

If that *which* is in something as in a subject is removed³⁷ . . . that *in which* it was remains; but not if that which is in something as part of its essence is removed. For instance, if rational is removed, human being does not remain.³⁸

Aquinas even plainly states: “For a dead human being differs from a living human being in that he is without sensation [i.e., conscious awareness].”³⁹

As compelling as these passages appear in supporting Kluge’s interpretation, I nevertheless find the interpretation flawed and Kluge misconstruing the meaning of these assertions when taken out of context. It is evident in all the above passages that Aquinas is referring to *logical* distinctions among species and genera. Thus, when Aquinas asserts that an animal remains if rationality is removed from a human being, he is not offering an *ontological* description of what happens in the process of human death. Rather, he is claiming that, if one mentally abstracts the concept of rationality from the definition of a human being, the concept of animality will yet remain. Aquinas’s point here is to show how being an animal does not entail being rational; if such were the case, then all animals would be persons. The same conclusion goes for the concepts of being alive and being rational; something can be living without being a person. This conclusion, however, is arrived at with respect to the *universal* natures of different types of beings. Aquinas’s concern is how different specific and generic categories can exist as logically distinct components of a single nature; e.g., the categories of existence, life, animality, and rationality compose the definition of a human being. Nothing about these passages refers to actual metaphysical distinctions among types of being within an *individual* human being.

Aquinas does not say, “Remove rationality from *this* human being, and she will remain as a

living animal no different ontologically from any other non-rational animal.” Rather, Aquinas is best understood as saying in these passages, “Logically abstract the concept of rationality from the definition of a human being, and the concepts of life and animality will remain, thereby rendering the definition of a human being no different from that of any other species in the animal genus.”

Aquinas explicitly speaks in this manner in another passage: “in the abstraction which is made according to the universal and the particular, that from which the abstraction is made does not remain; for, when the difference of rationality is removed from human being, *human being* does not remain in the intellect, but only *animal*.”⁴⁰ Aquinas refers here to logical distinctions among universal natures made by the mind and not to ontological distinctions among different stages of an individual substance’s existence. Additionally, while Aquinas is certainly correct in asserting that “a dead human being differs from a living human being in that he is without sensation,” this assertion does not imply that the loss of sensation is the *only* difference between the dead and the living. If such an implication were Aquinas’s intention, then he contradicts himself and is plainly wrong; for there are many differences Aquinas notes between the nature of a dead and a living human being. Therefore, this singular assertion cannot be taken to imply that Aquinas holds the loss of sensation to be *sufficient* for a human being’s death.

Aquinas’s meaning is made clear when the isolated passage is put in its proper context. In the passage at issue, Aquinas is commenting on Aristotle’s response to the question of whether a human being can be happy only at death when she is no longer subject to evil or misfortune. Affirming Aristotle’s response, Aquinas recognizes first that a dead human being differs from a living human being by lacking sensation. Thus, it would seem that a dead human being is happy, because she can no longer sense, i.e., be conscious of, any further evil or

misfortune. Aquinas and Aristotle note, though, that even the dead can suffer the evils of a dishonored memory or misfortune visited upon their descendants; similarly, the living can suffer such evils without being aware of them. For example, someone may slander me behind my back while I live and continue to do so when I am dead. From the context, it is clear that Aquinas is focusing upon one particular way in which the dead differ from the living to make a specific point, and not defining a necessary and sufficient criterion for asserting that a human being is dead.

As noted above, acceptance of higher-brain death, from a Thomistic standpoint, requires one to argue that when a body is no longer able to provide the biological foundation necessary for conscious rational thought, a substantial change occurs in which the rational soul separates and the body becomes informed by either a sensitive or vegetative soul. If this is what indeed occurs in cases of PVS, then the body on the bed is a “humanoid animal” or perhaps a mere “vegetable”:

In naturally occurring cases of persistent vegetative state, in spite of rather complex brainstem functions, the person is still dead, having left behind a cadaver informed by a vegetative soul.⁴¹

This purportedly Thomistic account of human death suffers from three serious flaws. First, as argued above, Kluge misconstrues the passages upon which he bases his interpretation of Aquinas. Second, the account is at odds with Aquinas’s explicit contention that it is a body’s inability to actualize a rational soul’s *vegetative* capacities which signals the soul’s separation from it; a PVS patient retains the intrinsic activity of spontaneous respiration and other vital metabolic functions. The higher-brain account involves an unwarranted separation of a soul’s rational capacities from its sensitive and vegetative capacities.

Aquinas holds that a human being's proper capacities do not begin to exist in a developing human embryo at the same time; the vegetative capacities are actualized first, then the sensitive capacities, and finally the rational capacities which signal the existence of a human being (see note 27 for references). Nevertheless, once a rational soul is instantiated as the substantial form of a human body that has developed sufficiently, it alone possesses all of a human being's proper capacities: vegetative, sensitive, and rational. It is not the case that there are *three* souls informing a fully developed human body. Rather, the vegetative soul that first informs a living human embryo is annihilated once the embryo develops to the point where it has sense organs and sufficient neural development for sensitive operations; it thus becomes informed by a sensitive soul that has both sensitive and vegetative capacities. The sensitive soul is annihilated once the point is reached where neural development is sufficient to support rational operation and a rational soul is instantiated that has vegetative, sensitive, and rational capacities. Aquinas argues at great length that a human being's proper capacities have their source in *one* substantial form: a rational soul.⁴²

Given Aquinas's strong contention of the *unicity* of a human being's substantial form, it is not surprising that he does not characterize human death in the same way that he does human generation. Once a rational soul begins to inform a properly disposed human body, the body must lose its disposition for *all* the soul's proper capacities in order for the separation of soul and body to occur. Accepting the higher-brain interpretation entails the following metaphysical description of how human death occurs: There exists first a rational substance informed by a rational soul, and then possibly a non-rational animal substance informed by a sensitive soul, and finally a merely living substance informed by a vegetative soul before its final transformation into a lifeless corpse. This description violates Ockham's Razor, which states that *ceteris*

paribus the simplest explanation of a given phenomenon—i.e., the explanation that is the least metaphysically complex by requiring the postulation of the least number of entities—is the explanation to which one ought to give assent.

Finally, aside from the metaphysical determination of when death occurs, higher-brain death is *epistemologically* problematic for two reasons. First, it is extremely difficult to determine accurately which structures of the brain are correlated with rational activity and when such structures become irreversibly non-functional. In fact, there are a number of cases in which PVS patients have been misdiagnosed.⁴³ A significant example is Patricia White Bull, a New Mexico woman who awoke from a sixteen-year coma after being diagnosed as “permanently vegetative” three different times.⁴⁴ Second, while Aquinas notes that one can determine the presence of a certain capacity based upon observation of its corresponding activity,⁴⁵ it does not follow that the lack of observation of an activity entails the lack of its corresponding capacity. Therefore, it is fallacious to infer that a PVS patient does not have any rational capacities only on the basis of not having observed her performance of any rational activity or correlative neural activity.

Due to these difficulties with a higher-brain interpretation of Aquinas’s account of death, I contend that a more plausible, properly Thomistic approach is to argue that the separation of a human being’s rational soul from her body does not occur until the body ceases to function as a *unified, integrated organism*. A rational soul is not only the seat of a human being’s rational capacities; it is also the substantial form of a human body and is thereby the source of its sensitive and vegetative capacities. While PVS patients may no longer be able to actualize their rational or sensitive capacities, their souls remain embodied and are active in terms of their vegetative capacities. A human being exists before death as a composite of a rational soul and an

organic body, and is not identified with merely the exercise of rational capacities.⁴⁶ Hence, we cannot be certain that a PVS patient does not remain a human being—and thereby a person—until there is incontrovertible evidence that her rational soul has altogether ceased to be active as the substantial form of her body. Irreversible cessation of higher-brain functioning may serve as evidence that a soul’s rational capacities can no longer be actualized while it remains embodied, and one may wish to infer from this evidence that the rational soul has ceased to be that body’s substantial form. Such an inference, however, is invalid insofar as the remaining vegetative operations present in a PVS patient serve as evidence that her rational soul remains active as her body’s substantial form due to the soul’s vegetative capacities still being actualized in that body.

Aquinas’s explicit statements regarding a human being’s death indicate that he takes the cessation of vital metabolic functioning to be the proper evidence that a rational soul has ceased to inform a particular human body. It may be the case that a proper Thomistic understanding of death, when viewed in the light of contemporary biological data, may end up differing in its conclusion from Aquinas’s explicit account. The arguments supporting a higher-brain death interpretation of Aquinas’s account are not conclusive and thus do not persuasively demonstrate that this interpretation is a proper contemporary rendering of Aquinas’s account. I will now show that whole-brain death serves as a sufficiently plausible interpretation of Aquinas’s view in the light of the current biological understanding of death and has the virtue of avoiding the radical departure from Aquinas’s explicit assertions required by the higher-brain interpretation.

WHOLE-BRAIN DEATH

The whole-brain criterion of death has its roots in an understanding of death being related to an organism *as a whole*. As James Bernat puts it:

My colleagues and I have defined death as the permanent cessation of functioning of the organism as a whole. “The organism as a whole” is an old biological

concept⁴⁷ that refers not to the whole organism (the sum of its parts) but to that *set of vital functions of integration, control, and behavior* that are greater than the sum of the parts of the organism, and that operate in response to demands from the organism's internal and external milieu to support its life and to maintain its health. Implicit in the concept is the primacy of the *functional unity* of the organism.⁴⁸

Bernat goes on to define the "critical functions" of an organism as a whole, the cessation of all of which is necessary and sufficient to constitute the loss of an organism's functional unity:

Critical functions of the organism as a whole comprise three distinct and complementary biological categories: 1) *vital functions* of spontaneous breathing and autonomic control of circulation; 2) *integrating functions* that assure homeostasis of the organism . . . and 3) *consciousness* . . . The critical functions in all three categories must be permanently lost for the organism to be dead. Correlatively, the presence of any of the three elements constitutes sufficient evidence for life.⁴⁹

As I will show, Bernat's description of what is necessary and sufficient for death is consonant with Aquinas's understanding of human nature.

Bernat's three categories of critical functions that define the existence of an organism as a whole can be collectively termed the organism's "integrative unity." From a Thomistic standpoint, a human being's integrative unified existence involves the existence of a human body informed by a soul that has rational, sensitive, and vegetative capacities. Clearly, a soul's rational and sensitive capacities correspond to Bernat's reference to consciousness. Furthermore, it is reasonable to correlate Bernat's vital and integrating functions with a soul's vegetative capacities. I thus propose that the Thomistic concept of death involves the irreversible loss of a human being's rational, sensitive, *and* vegetative capacities. This understanding of death is advocated by Thomists Philip Smith⁵⁰ and Benedict Ashley⁵¹ in agreement with the Pontifical Academy of Sciences' Working Group on the Determination of Brain Death and Its Relationship to Human Death (10-14 December, 1989): "A person is dead when there has been total and

irreversible loss of all capacity for integrating and coordinating physical and mental functions of the body as a unit.”⁵²

In Thomistic terms, when integrative unity has been irreversibly lost, a body is no longer *proportionate* for rational ensoulment; for it can no longer materially support a soul’s proper capacities in a *unified* substance:

As the source of life and the single organizing principle of the body, the soul not only enables the person to breath, circulate blood, think, choose, etc., but it also unifies these diverse activities into an integrated whole or system. When the soul separates from the body at death, the remaining organism is deprived of its internal unity and its radical capacity for human actions. Thus, human death . . . [is equated] with the death of the organism as a whole.⁵³

Ashley argues that the cessation of whole-brain functioning constitutes death based upon the principle that a rational soul “moves” the heterogeneous parts of its body through a primary organ: “physical life can exist only when the principal part of the total organism maintains its integrative unity by providing its highest and most specific function, both exists and operates at least minimally.”⁵⁴

An additional reason for holding the whole-brain criterion of death is that it defines death in terms of the *one* organ that is directly correlated with *all* of a human being’s proper capacities: vegetative, sensitive, and rational. Shewmon asserts the following:

The vast literature on “brain death” reveals two basic schools of thought regarding the essence of human death: loss of integrative unity of the body and loss of specifically human properties [i.e., the capacity for conscious rational thought and volition]. If the intellectual soul is indeed the substantial form of the body, these two aspects ought to converge to one and the same pathophysiological event. I take this conceptual unity to be as fundamental an axiom as either separate notion, so that convergence of the two approaches could be used as a kind of litmus test for formulations of death.⁵⁵

I find this “fundamental axiom” to have value insofar as it disallows the distinction favored by some scholars between “personal death” and “biological death.”⁵⁶ Ashley also adopts this axiom

as it serves to define the loss of all of a human being's proper capacities as coinciding in a single, empirically-verifiable event: the cessation of whole-brain functioning.⁵⁷

Whole-brain death consists of the cessation of all three sets of critical functions Bernat defines as individually sufficient for the existence of a living human organism.⁵⁸ Furthermore, since these critical functions correspond to the Thomistic understanding of a soul's vegetative, sensitive, and rational capacities, I conclude that the irreversible cessation of whole-brain functioning⁵⁹ constitutes a human being's death from a Thomistic standpoint and can be understood as *the* event which indicates a rational soul's separation from the body it informs.⁶⁰

CONCLUSION

My aim in this article has been to develop a proper Thomistic understanding of the end of a human being's embodied existence—the possibility of post-mortem bodily existence aside.⁶¹ Such an understanding involves the determination of when a rational soul can be asserted as the substantial form of a particular human body. The evidence supporting this assertion is the body's having vegetative, sensitive, and rational capacities or activities. I conclude that the presence of a primary organ through which integrative vegetative functioning is exercised, and thus a human body's organic/substantial unity is achieved, signals that the body is informed by a rational soul. Evidence that the brain functions as the integrative foundation for its body's vegetative and sensitive operations, as well as being correlated with rational operation, motivates the understanding of it as a fetal, infant, and adult human body's primary organ. Therefore, the cessation of *both* a brain's rationally-correlated and biologically-integrative functioning indicates a rational soul's departure as a particular human body's substantial form. The whole-brain criterion is thus sufficient for the determination of when a human being has died.

What significance does this understanding of human death have with respect to clinical practice and public policy? In other words, what *normative* conclusion follows from the claim that the proper criterion of death, from a Thomistic metaphysical standpoint, is the cessation of whole-brain functioning? The whole-brain criterion has become a widely accepted standard for the determination of death (see note 3). However, it has not become a universal standard. Japan, for instance, though it legally permits use of the whole-brain criterion as of October, 1997, restricts its use to “certain clearly specified circumstances”⁶² and the issue remains a source of contention there. Adherents of Orthodox Judaism also generally reject the whole-brain criterion based on the Scriptural reference to God “breathing” life into Adam and respiration thus being the primary indication of a human being’s existence.⁶³ The issue is currently under debate, though, and certain rabbis and Jewish scholars have begun to advocate whole-brain death.⁶⁴

Based on the lack of universal consensus regarding acceptance of whole-brain death, certain legislatures, such as the state of New Jersey, have adopted a policy of declaring whole-brain death as the standard—or default—criterion for determining death, but include a “conscience clause” whereby individuals, such as Orthodox Jews, may have their desire respected that the traditional circulatory/respiratory criterion be used to clinically establish their own death.⁶⁵ Robert Veatch proposes that such a clause is not only good policy, but also should be expanded to allow individuals to have respected their desire to be declared dead when their higher-brain functions have irreversibly ceased.⁶⁶ The whole-brain criterion, or any concept or criterion of death for that matter, would be normative only insofar as it is so for an individual of a particular religious or philosophical persuasion. While whole-brain death is a reasonable default, according to Veatch, to be used when there is no expressed or reasonably presumed

desire on a patient's part for an alternative criterion to be utilized, it should not be *imposed* as a standard for determining death for all individuals.

Both the whole-brain and circulatory/respiratory criteria are argued to follow from the same concept of death for human beings; namely, that a human being dies when her body ceases to function as an *organism* with integrative unity. Higher-brain death, however, involves a distinct concept of death in which a human being dies when she ceases to exist as *person*, defined as a self-conscious rational entity by higher-brain death advocates. This understanding of human personhood is not Aquinas's,⁶⁷ who links a human person's death with the death of the organism that constitutes her. While I contend that Aquinas would accept the whole-brain criterion, it does not strike me as objectionable that an individual be free to request, explicitly or presumptively, that the traditional criterion be used in her case insofar as both criteria follow from the same metaphysical understanding of human nature and the relationship of a human person to her body. It is only with respect to the question of whether the cessation of whole-brain functioning is sufficient for the loss of a human organism's integrative unity that there is debate between these two criteria.

Higher-brain death, however, involves a completely different metaphysical understanding of human nature that is not Thomistic. Does my conclusion, then, apply only to those who accept Aquinas's view or Roman Catholics whose general philosophical viewpoint is largely shaped by Aquinas's thought? The answer to this question depends upon whether the rationale underlying Aquinas's position regarding human death is theologically or philosophically based. If it is the former, then the principle of religious freedom and tolerance would limit the normative applicability of Aquinas's position to those who share the relevant theological premises. In the account described above, though, no appeal is made to theological premises.

Aquinas's view of death and the interpretation I offer are based upon potentially universalizable philosophical premises regarding human nature. One can thus argue that the Thomistic position is universally applicable and concepts of death based upon alternative philosophical understandings of human nature are not valid options for clinical practice and public policy; higher-brain death would be an example of such. Of course, an effective argument for the normative applicability of the Thomistic metaphysical view of human death requires an appeal to a compatible moral theory to move it from being a view that *may* be universally applicable to a view that *should* be universally applied as a limit on admissible clinical practices and public policies regarding when a human being is to be properly declared dead.⁶⁸

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² See Ad Hoc Committee of the Harvard Medical School. A Definition of Irreversible Coma. *Journal of the American Medical Association* 1968; 205: 337-40.

³ The whole-brain criterion has received legislative approval in several nations, including the U.S.; see President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. 1981. *Defining Death: Medical, Legal, and Ethical Issues in the Definition of Death*. Washington, D.C. U.S. Government Printing Office. In addition, it has received moral approval from the Roman Catholic Church; see John Paul II. Address to the International Congress on Transplants. *The National Catholic Bioethics Quarterly* 2001; 1: 89-92; R. White, H. Angstwurm, and I. Carrasco de Paula, eds. 1992. *Working Group on the Determination of Brain Death and Its Relationship to Human Death*. Vatican City. Pontificia Academia Scientiarum.

⁴ Note that my concern here is with the concept of death for human beings only. I will not address any proposed concept of death for non-human organisms. Since Aquinas asserts that every human being is a person—see his

Summa theologiae [ST]: IIIa.16.12.ad 1—and personhood is thus *essential* to human nature, the terms “human being,” “person,” and “human person” will be taken synonymously.

⁵ Following Aristotle, Aquinas defines a “rational” soul as a soul that has the relevant capacities for life, sensation, and rational thought and is the type of soul proper to the human species. A “sensitive” soul, on the other hand, has the relevant capacities for only life and sensation, and is the type of soul proper to all non-human species of the animal genus. A “vegetative” soul has the relevant capacities for only life and is proper to all non-animal living organisms. See Aristotle. *De anima*: II.2-3.

⁶ Aquinas. *Summa contra Gentiles* [SCG]: II.58. All translations of Aquinas are my own and are taken, unless otherwise noted, from the Leonine edition of Aquinas’s works: Aquinas. 1882-. *S. Thomae Aquinatis Doctoris Angelici Opera Omnia*. Rome. Commissio Leonina.

⁷ For his assertion of (3), see Aquinas. *Quaestio disputata de spiritualibus creaturis* [QDSC]: IV; *In Aristotelis librum De anima commentarium* [In DA]: II.1; ST: IIIa.50.5.ad 1.

⁸ Aquinas. *Quaestiones disputatae de veritate* [QDV]: XIII.4.ad 2.

⁹ Aquinas. *Scriptum super sententiis magistri Petri Lombardi* [In Sent]: I.8.v.3.ad 3. P. Mandonnet and M. Moos, eds. 1929-47. 4 volumes. Paris. Lethielleux. This passage elucidates the second sense of “to live” stated in the previous quotation.

¹⁰ See Aquinas. *Quaestio disputata de anima* [QDA]: IX.ad 13, X.ad 4, X.ad 11, XI.ad 16; In Sent: I.8.v.3.ad 3.

¹¹ See QDA: X.ad 4.

¹² See QDA: XI.ad 16.

¹³ QDV: XIII.4.ad 2.

¹⁴ By “individual contrary parts,” Aquinas is referring to a human body’s diverse organs and the basic elements constituting them.

¹⁵ QDV: XXV.6.

¹⁶ See QDA: VIII.ad 9, XIV.ad 13. Aquinas considers such “defects” to be the result of original sin and not from the fact *simpliciter* of a human being’s natural embodiment; see ST: Supp.75.1.ad 5.

¹⁷ QDA: XIV.ad 20.

¹⁸ It is clear in both this passage and the preceding one that Aquinas is referring to a *rational* soul, as opposed to a vegetative or sensitive soul, since only a rational soul is incorruptible, as the soul is described in the preceding

passage, and Aquinas does not entertain any discussion of vegetative or sensitive souls until QDA: XI, which comes after this passage.

¹⁹ QDA: IX.ad 16.

²⁰ Once again, the context of this passage, in ST: Ia.76 which concerns the union of a *rational* soul to a body, makes it clear that Aquinas is not referring to either a vegetative or sensitive soul.

²¹ ST: Ia.76.7.ad 2. The relationship between the presence of a rational soul and a body's respiratory activity merits further discussion that I have space to provide here. Elucidating this relationship is important insofar as it bears on the role artificial means of life-support, such as mechanical ventilation or cardio-pulmonary bypass machines, may have with respect to the metaphysical constitution of a human being dependent upon such means to continue respiring and circulating oxygenated blood. I discuss this issue in J. T. Eberl. Forthcoming. *Thomistic Principles and Bioethics*. Lisse. Swets & Zeitlinger.

²² R. Veatch. 1988. Whole-Brain, Neocortical, and Higher Brain Related Concepts. In *Death: Beyond Whole-Brain Criteria*. R. Zaner, ed. Boston. Kluwer: 173.

²³ Ibid. p. 173.

²⁴ See ST: Ia.75.2; G. Klima. Aquinas' Proofs of the Immateriality of the Intellect from the Universality of Human Thought. *Proceedings of the Society for Medieval Logic and Metaphysics* 2001; 1: 19-28.

²⁵ See J. T. Eberl. Aquinas on the Nature of Human Beings. *The Review of Metaphysics* Forthcoming.

²⁶ See D. A. Shewmon. The Metaphysics of Brain Death, Persistent Vegetative State, and Dementia. *The Thomist* 1985; 49: 24-80. It should be noted that Shewmon no longer holds this position and now argues for a return to the circulatory/respiratory criterion for determining when death occurs. See note 55.

²⁷ See ST: Ia.76.3.ad 3, Ia.118.2.ad 2; QDA: XI.ad 1; SCG: II.89; QDSC: III.ad 13; *Quaestiones disputatae de potentia Dei* [QDP]: III.9.ad 9; *Compendium theologiae*: 92.

²⁸ The term "mind" does not precisely correspond to Aquinas's term "intellect" (*intellectus*). The mind includes certain capacities, such as the estimative capacity, that are distinct from the intellectual capacity to understand universal concepts. Thus, the intellect is but one capacity of the mind. Contemporary philosophers, though, often understand the concept of mind in a fashion similar to Aquinas's concept of intellect and thus I propose the above substitution of terms.

²⁹ See QDA: II; QDP: III.9.ad 22; ST: Ia.101.2; SCG: II.83.

³⁰ The loss of higher-brain functioning does not preclude a rational soul's continuing to engage in rational activity, but this would require the soul to have separated from its body and thus for death to have occurred.

³¹ See Eberl, *op. cit.* note 25.

³² Shewmon, *op. cit.* note 26, p. 48.

³³ *Ibid.* p. 61.

³⁴ See E.-H. Kluge. St. Thomas, Abortion and Euthanasia: Another Look. *Philosophy Research Archives* 1981; 7: 312-44. For a similar argument, see R. Pasnau. 2002. *Thomas Aquinas on Human Nature*. New York. Cambridge University Press: 124.

³⁵ Aquinas. *In librum de causis expositio*: I.

³⁶ In DA: III.4.

³⁷ Aquinas is here referring to accidental properties.

³⁸ QDP: VIII.4.ad 12.

³⁹ Aquinas. *In decem libros ethicorum Aristotelis ad Nicomachum expositio*: I.15.

⁴⁰ ST: Ia.40.3.

⁴¹ Shewmon, *op. cit.* note 26, p. 51.

⁴² See ST: Ia.76.3-4; In DA: II.5; *De unitate intellectus contra Averroistas*: I.

⁴³ See K. Andrews, L. Murphy, R. Munday, and C. Littlewood. Misdiagnosis of the Vegetative State: Retrospective Study in a Rehabilitation Unit. *British Medical Journal* 1996; 313: 13-6; N. L. Childs, W. N. Mercer, and H. W. Childs. Accuracy of Diagnosis of Persistent Vegetative State. *Neurology* 1993; 43: 1465-7.

⁴⁴ The story of Patricia White Bull was reported by The Associated Press and appeared, among other publications, in the *Saint Louis Post Dispatch*, January 5, 2000: A4. See J. Kavanaugh. 2001. *Who Count as Persons? Human Identity and the Ethics of Killing*. Washington, D.C. Georgetown University Press: 68, note 25.

⁴⁵ See ST: Ia.87.1.

⁴⁶ See P. Smith. Personhood and the Persistent Vegetative State. *Linacre Quarterly* 1990; 57: 49-57; Transient Natures at the Edges of Human Life: A Thomistic Exploration. *The Thomist* 1990; 54: 191-227; J. P. Moreland. Humanness, Personhood, and the Right to Die. *Faith and Philosophy* 1995; 12: 95-112; and S. Wallace. Aquinas versus Locke and Descartes on the Human Person and End-of-Life Ethics. *International Philosophical Quarterly*

1995; 35: 319-30; and S. B. Rae. 2000. *Body and Soul: Human Nature and the Crisis in Ethics*. Downers Grove, IL. InterVarsity Press: 316-37.

⁴⁷ See J. Loeb. 1916. *The Organism as a Whole*. New York. Putnam.

⁴⁸ J. Bernat. A Defense of the Whole-Brain Concept of Death. *Hastings Center Report* 1998; 28: 17, emphasis mine.

⁴⁹ Ibid. p. 17, emphasis mine. Cf. 1999. Refinements in the Definition and Criterion of Death. In *The Definition of Death: Contemporary Controversies*. S. Youngner, R. Arnold, and R. Shapiro, eds. Baltimore. Johns Hopkins University Press: 83-92.

⁵⁰ See P. Smith. Brain Death: A Thomistic Appraisal. *Angelicum* 1990; 67: 3-35.

⁵¹ See B. Ashley. Integrative Unity and the Human Soul. *The National Catholic Bioethics Quarterly* 2001; 1: 7-9; and K. O'Rourke. 1997. *Health Care Ethics*. Fourth edition. Washington, D.C. Georgetown University Press: 316-37.

⁵² White, Angstwurm, and de Paula, *op. cit.* note 3, p. 81.

⁵³ Smith, *op. cit.* note 50, pp. 24-5. Cf. Ashley, *op. cit.* note 51, p. 8.

⁵⁴ Ashley, *op. cit.* note 51, pp. 7-8.

⁵⁵ D. A. Shewmon. "Brain Death": A Valid Theme with Invalid Variations, Blurred by Semantic Ambiguity. In White, Angstwurm, and de Paula, *op. cit.* note 3, p. 31. In this article, Shewmon retracts his previous advocacy of higher-brain death. Shewmon has since altered his position again to argue for a return to a criterion for determining death in terms of the irreversible cessation of circulatory and respiratory activity; see D. A. Shewmon. The Brain and Somatic Integration: Insights Into the Standard Biological Rationale for Equating "Brain Death" With Death. *The Journal of Medicine and Philosophy* 2001; 26: 457-78; "Brainstem Death," "Brain Death" and Death: A Critical Re-Evaluation of the Purported Equivalence. *Issues in Law and Medicine* 1998; 14: 125-45; Recovery from "Brain Death": A Neurologist's Apologia. *Linacre Quarterly* 1997; 64: 30-96.

⁵⁶ This distinction is, of course, favored by advocates of higher-brain death. See J. Rachels. 1986. *The End of Life: Euthanasia and Morality*. New York. Oxford University Press: 5-6, 24-7.

⁵⁷ See Ashley, *op. cit.* note 51, p. 8.

⁵⁸ See Bernat, *op. cit.* note 48, p. 18.

⁵⁹ The term "whole-brain functioning" does not refer to the functioning of every part of the brain, but of the set of critical neural systems—defined by Bernat—present in the cerebral cortex, cerebellum, and brainstem that constitute

the brain's role as an "integrator" for its body. All three components must be irreversibly non-functional in order for the brain *as a whole*, and thus the human being, to be considered dead. However, there is general recognition that random electrical activity may persist in a brain that is nonetheless dead.

⁶⁰ See Ashley, *op. cit.* note 51, p. 9; C. Manni. 1999. A Report on Cerebral Death. In *The Dignity of the Dying Person: Proceedings of the Fifth Assembly of the Pontifical Academy for Life*. J. de Dios Vial Correa and E. Sgreccia, eds. Vatican City. Libreria Editrice Vaticana: 106.

⁶¹ See J. T. Eberl. The Metaphysics of Resurrection: Issues of Identity in Thomas Aquinas. *Proceedings of the American Catholic Philosophical Association* 2000; 74: 215-30.

⁶² M. Lock. 1999. The Problem of Brain Death: Japanese Disputes about Bodies and Modernity. In Youngner, Arnold, and Shapiro, *op. cit.* note 49, p. 239; R. Kimura. Japan's Dilemma with the Definition of Death. *Kennedy Institute of Ethics Journal* 1991; 1: 123-31.

⁶³ See *Genesis* 2:7.

⁶⁴ See F. Rosner. 1999. The Definition of Death in Jewish Law. In Youngner, Arnold, and Shapiro, *op. cit.* note 49, pp. 210-21.

⁶⁵ See the New Jersey Declaration of Death Act (N.J.S.A. 26:6A-1 et seq.). April 8, 1991.

⁶⁶ R. Veatch. 1999. The Conscience Clause: How Much Individual Choice in Defining Death Can Our Society Tolerate? In Youngner, Arnold, and Shapiro, *op. cit.* note 49, pp. 137-60.

⁶⁷ See Eberl, *op. cit.* note 25.

⁶⁸ I introduce Aquinas's natural law theory to support the normative application of his account of human death in Eberl, *op. cit.* note 21.