

Can Neuroscience Aid in Establishing an Islamic View of Death?

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Introduction & Hypothesis

On Friday 5 February 1999, the king of Jordan, King Hussain bin Talal (d. 1999) was diagnosed as brain dead after multiple organ failures resulting in deep coma. He was being treated for non-Hodgkin's Lymphoma in a clinic in the USA (WIRED Staff 1999). The German magazine *Der Spiegel* reports at the time that according to Muslim tradition, the king must be buried within twenty-four hours of death. The time was insufficient for international dignitaries and state officials to congregate for the funeral. Therefore, news of the imminent death (and not the actual death) of the king was broadcasted. The king was flown back to Jordan whilst on life-support machine. Forty-eight hours later, when international guests have all arrived, on Sunday 7 February 1999 his life-support machine was withdrawn, and his death was registered as a result of the cessation of cardiopulmonary and circulatory functions (Der Spiegel cited in Krawietz 2003, 196).

A more recent incident in 2013 throws into relief and questions the criteria employed to determine death. Jahi Mcmath (d. 2018), a thirteen-year-old African American girl, was voluntarily admitted to hospital in the State of California to have her tonsils removed to help with the quality of her sleep (Aviv 2018). Due to a series of negligence in care, Mcmath lost a substantial amount of blood leading to an irreversible coma (Goodwin 2018). An apnoea test was carried out and two doctors independently declared her to be brain dead; deemed as legal death in the State of California.

The parents, who were strict Catholics, challenged this decision and the case ended up in court. A third doctor was instructed by the court to carry out similar tests on Jahi; who corroborated the findings of his two colleagues. The court declared Jahi to be dead, and decided to release her to her parents whilst attached to the life-support machine. With the financial assistance of some pro-life charities, the parents were successful in transporting her to an apartment in the State of New Jersey which has a two-death legal definition. Whilst Jahi was declared dead in California, New Jersey gave the parents options to choose whether she was dead or alive. They opted for non-death. She was kept on an artificial ventilator for five years and was nursed by her mother in the apartment. During these five years, the mother believed that Jahi was getting better and even responded to her cues. The mother videoed these responses. The doctor who examined Jahi in New Jersey, while he did not witness her respond when he prodded her, was nevertheless convinced that the recording was accurate (Shewmon 2018). Jahi lived for five years and died in 2018 due to an infection (Aviv 2018).

What the above two vignettes reveal is that modern life-saving technologies coupled with public policies and politics have created a peculiar situation where a person can be simultaneously dead and alive depending on which policies and criteria are applied. This makes brain-death an extremely sensitive and contentious issue. Is brain-death a prognosis of death or its diagnosis? (Rady, Verheijde, and Ali 2009). Is it a concept or is it a criterion? (Krawietz 2003). Is it a liminal space, a betwixt and between? Does the brain-dead person die

twice? (Lock 2002). The implication of ascertaining the correct answers to these questions for Muslims are far reaching for two reasons: (1) whether it is permissible to withdraw machine-assisted life support from the brain-dead person. A proper investigation of brain-death is of paramount importance as it relates to several Islamic legal consequences, such as: making arrangements and preparation for the funeral and burying, execution of bequests and distribution of inheritance, and determining when the living spouse can remarry (Stodolsky and Kholwadia 2021, 78).

Secondly and more practically, whether it is permissible to retrieve vital organs from a brain-dead donor for the purpose of organ transplantation. There are two dominant criteria used for determining death. First, a circulatory criterion according to which death is determined by the cessation of vital fluids such as blood and breathing and is typically associated with the beating of the heart. The second criterion is known as a neurological criterion (more commonly referred to as brain-death) and is associated with the permanent damage to the brainstem resulting in a dissociation of the body's integrating capacity. Since organs, for transplantation purposes, require that they are rich in oxygen, once the heart stops pumping blood (circulatory criterion), organs become hypoxic, and the cells within them start dying. Organs retrieved in such states can be transplanted, but are not deemed optimal. In contrast, once a potential organ donor has been determined dead using a neurological criterion (DBD), the donor is kept on the ventilator until their organs are retrieved. The ventilator ensures that all organs are perfused with a rich supply of blood and oxygen. These organs are optimal for transplantation and are highly sought after. Thus, brain-death provides a convenient solution to the problem of organ shortage available for transplant.

In this puzzle, I discuss how a Jordanian Muslim theologian, Muhammad Na'im Yasin (b.1943), makes an Islamically legal case for a brain-based definition of death. Yasin's argument is simple. As a Muslim, he believes in the concept of the soul and that its departure from the body results in the death of the person. However, he argues that the soul is no mystery, and it is possible to empirically monitor its movements, thus determining when the soul has left the body. By juxtaposing the discussions on the functions of the soul by medieval Muslim scholars, especially Ibn al-Qayyim al-Jawziyya's (d. 1350), with that of the function of the brain in modern neuroscience through a process of syllogism, Yasin arrives at the conclusion that brain-death can be viewed as *a* moment when the soul leaves the body (Yasin 1986). Once brain-death is established as legitimate Islamic death, it becomes easy for Yasin to declare that DBD organ retrieval is permissible.

Fields of Study

2.1 Islamic views on the soul and death

In Muslim theological anthropology, the human being is tied to the natural world in a microcosm-macrocosm relationship where human nature is an imprint of the cosmic nature, and both are in turn signs pointing to the Divine.

We shall show them Our signs in every region of the earth and in themselves, until it becomes clear to them that this is the Truth. Is it not enough that your Lord witnesses everything? (Qur'an 41:53).

The human person is the confluence of the earthly body and heavenly spirit (*ruh*) known as the soul (*nafs*) when embodied. The soul is the life force of the human being, and which animates it. The life cycle of the human being, including death, is viewed as an expression of Divine creative power.

We created man from an essence of clay, then We placed him as a drop of fluid in a safe place, then We made that drop into a clinging form, and We made that form into a lump of flesh, and We made that lump into bones, and We clothed those bones with flesh, and later We made him into other forms —glory be to God, the best of creators!— then you will die and then, on the Day of Resurrection, you will be raised up again. (Qur'an 23:12-16).

Death in Muslim theological anthropology, like Christianity, is determined by the absence of the soul. The body, like the natural elements, is God's property, and this restricts any manipulation of the body by human beings. The human body, even after death, is sacred and any form of intervention to the body is deemed to be sacrilegious and an assault on the dignity of the deceased. Muslim funerary rites ensure the right of the deceased for a "good death" and that a dignified send-off is maintained (Brockopp 2003).

Death, according to Islam, occurs when the relationship of the soul and the body is severed, and the soul passes on to the next phase of its journey. The Qur'an describes how all living souls will taste death (Qur'an: 4:185); how the souls of the righteous will be smoothly drawn out by angels and how those of the evil ones will be violently ripped out (Qur'an: 79:1-2). The Qur'an also mentions how people during sleep experience micro-death where the soul temporarily leaves the body, only to return upon waking up (Qur'an: 39:42). Beyond these verses, there is no detailed explanation of the process of death in the Qur'an. The Prophet Muhammad adds that when the soul leaves the body, the eyes follow it. With the exception of the eyes (and the heart moving metaphorically into the throat at the time of death (Qur'an:75:27)) no other signs related to death and the extraction of the soul is mentioned in Muslim scripture.

The Qur'an is silent on the nature of the soul (Q17:85) and declares that the pithy knowledge endowed to human beings is insufficient to know its reality. Based on this, many Muslim scholars remark that it is not within human capacity to be able to determine the exact moment of the extraction/exiting of the soul from the body. Thus, death, according to them is a metaphysical phenomenon. Despite this, medieval Muslim scholars did discuss the function of the soul. Thus, al-Ghazali (d. 1111) writes that the soul is

A subtle matter which originates from the deep chasms of the human heart. It spreads to the rest of the body through pulsating veins which results in spreading of the light of life, sensation, sight and smell to the entire body. It is similar to the casting of light from a lamp to the different corners of the house, for it does not reach any part of the house but that part is illuminated. Thus, life is like the light cast on the wall, and the soul is like the lamp (Al-Ghazali cited in AlBar 2001, p. 43).

Muslim jurists developed signs which assisted them in determining the onset of death which they viewed as coterminous with the extraction/exiting of the soul from the body. These signs were mainly based on observations and folk medicine. They included limpness of the spine and limbs, change of colour, glaring of the eyes, depression of temples, slanting of lips, opening of the lips, ascending of the testicles with the drooping of the scrotal skin (Moosa 1999, 316). Interestingly, the non-beating of the heart was not one of those criteria. These signs were experiential and descriptive and have the stamp of their time. Modern medicine has the ability to determine death long before any one of these signs become apparent.

In investigating the relationship of the soul to the body, the polymath medieval Muslim theologian, Ibn al-Qayyim al-Jawziyya presents a number of views on the “stuff” that human beings are made up of. These include:

- The human is the sum of its body
- The human is the soul
- The human is a composite of body and soul
- The human is composed of matter residing within the body. Opinions diverge on what that matter is:
 - o The four humours (blood, phlegm, yellow bile, black bile)
 - o Blood
 - o A delicate soul that develops in the left chamber of the heart and flows to the different organs and limbs through the arteries.¹
 - o It is the soul that takes seed in the heart and ascends to the brain. It develops a potential to accept the capabilities of memory, thought and retention.
 - o It is an integral part of the heart
 - o It is a different type of matter which is dissimilar to the matter the body is made of (al-Jawziyya 2011, p. 520).

He further expands on what he means by “matter” in the last opinion (which is his preferred view). He writes

It is a subtle, sublime, spiritually illuminated living and animated body which permeates the essence of the organs and circulates in them like the way water flows in a rose or oil in the olive or fire in the coal. As long as the organs are capable of being influenced by this subtle body, the latter remains integrated with the organs and benefits them by providing sensation and movement.

However, when the organs are destroyed because of the overpowering of a foreign object and no longer are capable of receiving the effects of the soul, the latter departs from the body and makes its way to the Realm of the Souls. (Al-Jawziyya 2011, 521).

In the above quote, al-Jawziyya identifies the relation of the soul to the body. He argues that the fact that there are voluntary movements in a person is a sign that the soul is still residing in the body. But when there is no voluntary movement, this is an indication that the soul has departed.

Finally, Muslim scholars in the past have also debated whether death is an entity or a non-entity. In other words, is death the absence of life or a separate entity closely related to life, but independent of it. Both opinions have been put forward (Al-‘Ayni 2000, 1:429). The implication of this becomes apparent in the case of brain-death. If death is the departure of

¹ Al-Jurjani defines this as the “animal soul” *al-rūḥ al-ḥayawānī*. (al-Jurjani 2004, 97)

the soul from the body resulting in the absence of life, any biological functioning of the body, albeit mechanically and irrespective of the quality of life, is evidence of the presence of the soul in the body. Thence, retrieving organs using neurological criteria for death will be akin to murdering a dying but still live person (Rady, Verheijde, and Ali 2009). On the contrary, if death is an independent entity, it is incorrect to bracket the presence of the soul with some biological features of the body. According to this ontological understanding of life and death, retrieval of DBD organs is not problematic even though some mechanically supported biological functions remain.

2.2 Neuroscience and History

A philosophical definition of death is given as “the complete cessation of that which is essential to its nature” (Veatch and Ross 2015, 55). But to identify this “essential” component, the loss of which brings about a change of status from living to dead, is no trivial matter. It is an attempt to reach an understanding of the philosophical nature of the human person itself (Veatch and Ross 2015, 39).

Attempts to identify the location of the “essential” component has led to two theories: Centralism and Decentralism. Centralists believe that death resides in a single organ, be that the heart or the brain. It corresponds with the idea that death is an event, and it has been adopted by doctors and lawmakers for determining the time of death. In contrast, decentralists believe that death resides in every cell of the body and a person can only be deemed dead when every cell in the body ceases to live. This theory suggests that there is a continuum between life and death and that the latter is a process which is hard to pin down. The theory bodes well with philosophers and practitioners of religion who believe that the human person transitions from one realm to another (Davies 2005, 52).

The issue of who has the authority to declare someone dead has evolved in parallel with society’s technological development. Historically, determining death was a very private affair. It was the family with the assistance of religious leaders who determined death. The test was simple, if the person did not look like the living, feel like the living, sound like the living (listening to the pulse), the person was declared dead. This led to many misdiagnoses and people being buried alive. Two solutions were proposed to solve this problem: to bury the presumed dead person with a device like a bell which they can ring to draw attention should they wake up; or to leave the pronounced dead body until the onset of putrefaction.

With the development of the “iron lung”, artificial respirators, and other invasive life-sustaining devices from the 1930s onwards, the authority to diagnose death shifted from family members to the physician. Death has become medicalised and systematised. Respiration, blood flow and electric activities in the brain became in modern times indicators of life or lack thereof (Lock 2002, 70). In short, the cold disturbing sound of the EEG flatline with its eerie green hue against the backdrop of the computer monitor has now eclipsed the warm touch of a family member in determining death.

Further technological advancements in intensive care techniques towards the end of the 19th century made it possible to keep a patient warm and breathing whilst in an irreversible state of coma (Machado et al. 2007, 197; Veatch and Ross 2015, 53-63). An ad hoc committee of physicians, lawyers, theologians and social scientists were assembled with a primary purpose

‘to define irreversible coma as a new criterion for death’ (Veatch and Ross 2015, 53). The name given to the committee was the ‘Harvard Ad Hoc Committee to examine the definition of Brain Death’. The change in definition of death from traditional circulatory definition of death to a brain-based definition protected surgeons from charges of causing premature death by retrieving of organs for transplantation purposes.

The President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioural Research further standardised the definition of ‘brain death’ for all the States of America in a 1981 report entitled “Defining death”. It introduced a common statute for all American states, the “Uniform Determination of Death Act” in which a brain-based criterion for death was officially recognised as equivalent to the cardiopulmonary standards (Nguyen 2018, 17-18). Endorsed by the President’s Commission, the “brain-death” definition garnered international recognition and went mainly unchallenged, although pockets of protests reared up from time to time (Lock 2002; Hamdy 2013; Padela, Arozullah, and Moosa 2013).

Whilst it is commonly believed that the life force is umbilically connected to the heart, be it in the form of the vital force of life being situated in the heart or as the residing place of the soul; what is it about the brain that has led modern physicians to conclude that the absence of vital brain functions is synonymous to the cessation of that which is essential to the nature of the human being?

Modern neuroscience has discovered that the brain is the most important organ of the body. In fact, some argue that death due to the cessation of circulatory functions is nothing more than an indirect measure of damage to the brain (Veatch and Ross 2015). The brain controls all the voluntary and involuntary activities of the body including consciousness and language. Whilst the cerebrum controls higher brain activities such as the capacity to rationalise, the capacity to experience, consciousness, voluntary acting and personal identity amongst others, it is the brainstem that controls autonomic functions such as circulation, respiration, digestion, swallowing and gag reflexes. The brainstem is also responsible for controlling 10 out of the 12 cranial nerves which control sensory and motor functions. Thus, an irreversible damage to the whole brain (USA, Australia) or the brainstem (UK) is deemed as the death of the person. Thus, Margaret Lock states,

Although human organs and body parts can be kept alive even when fragmented, dispersed, and prosthetically transformed, a good number of contemporary physicians consider that the arguments about biological death, its physical location in the body, and the moment of its occurrence have been settled once and for all: ‘The brain will be accepted as the critical system of the human organism, and brain-death as irreversible destruction of that system’. (Korein 1978, cited in Lock 2002, 74).

Discussion

The issue of brain-death first came to notice in the Muslim Middle East from the 1980’s onwards. Johannes Grundmann notes that this was the result of an exponential growth in high-speed road traffic accidents in Muslim countries where victims sustained irreversible damage to the brainstem (Grundmann 2005, 2). It led religious scholars to discuss the Islamic status of brain-death, first for the purposes of the legality of switching off a life-support machine when the medical prognosis was futile, and later for the purpose of using brain-dead cadavers as potential organ donors.

A special conference organised by the Islamic Organisation for Medical Sciences (IOMS) in Kuwait discussed the issue of the beginning and end of human life in January 1985. The conference participants included a mixture of physicians and theologians. Most physicians accepted brain-death to be actual death, but they differed on what can be done afterwards. All of them agreed that the brain-dead person can be taken off the ventilator. Only half of them agreed on the acceptability of organ retrieval for transplantation purpose. In contrast, most theologians bar a couple did not acknowledge brain-death to be legitimate Islamic death. And yet, the resolution from the conference declared that brain-death and in particular brainstem death is to be recognised as legitimate death in Islam. It seems that the physicians had the upper hand in drafting the resolution. The resolution further mentioned that when it has been confirmed that the brainstem has become irreversibly damaged, it will not be necessary to artificially resuscitate the patient as doing so is medically futile. Certain death related practices can be enacted based on an asymmetrical analogy (*qiyās ma' al-fāriq*) with the ruling of the slain person (*madhbūh*) in Islamic law (see Moosa 1999 for more details on this). The declaration clearly mentioned switching off the life-support machine whereas the permissibility to retrieve vital organs for transplantation was implied.

Muhammad Na'im Yasin, a Jordanian theologian and a participant of the 1985 IOMS conference is one of the first to associate the soul with brain activity, thus accepting brain-death as legitimate Islamic death. He provides a simple explanation for this relationship by establishing a number of basic principles. Firstly, he accepts the Islamically obvious belief that human life ceases with the exiting of the thing which animates it in the first place, i.e. the soul. However, he argues, there is nothing in scripture which pinpoints exactly when this happens. Secondly, he reminds everyone that the soul is a creation of God, and as a creation of God, it is not mysterious and its functions can be observed empirically (Yasin 1986, 638; Moosa 1999, 317). According to Yasin, even though no one can understand the reality of the soul, this does not exclude us from discussing its features and functions. He does not believe that the soul is from the matters of the unseen (*ghaybiyat*) since the Prophet discussed how the soul enters and exits the body. Yasin argues that many scholars have written about and discussed different aspects of the soul without viewing their writing to be contradictory to scripture or detrimental to living a pious Muslim life. If the soul was completely unknowable, any discussion on it would have been forbidden (Yasin 1986, 638) in contrast to his conference co-participant Tawfiq al-Wa'i who believed exactly that (al-Wa'i 1986, 695). Yasin believed that the main properties of the soul include cognizance (*idrak*) and knowledge (*'ilm*) which are within the domain of knowable things (*mushahadat*).

Yasin's view of the anatomy of the soul stems from juxtaposing neuroscience and his reading of how medieval Muslim theologians described the functions of the soul. One scholar that he relies on for developing his views on the soul is Sharif al-Jurjani (d. 1413), an Iranian sunni scholar from Shiraz who describes the human soul as

[T]he subtle, knowing and cognizant feature of the human which is latched on to the animal soul and descended from the world of [God's] commands. The human mind is incapable of knowing its reality. This soul is at times disembodied and other times joint with the body. (al-Jurjani 2004, 97; Yasin 1986, 640).

A similar description is also traced back to Abu Hamid al-Ghazali and Ibn al-Qayyim al-Jawziyya. Drawing upon these and similar discussions and juxtaposing them with what is known about the functions of the brain in modern science, Yasin concludes that in order to function correctly, at times the soul requires assistance from the body and other times it is self-sufficient such as in the case of expressing emotions like pain and happiness.

Through a process of syllogism, Yasin argues that voluntary movements in the human body are a result of the effects of the soul on the body. In contrast, involuntary movements are not brought about by the actions of the soul, rather they are a result of the movements that God creates within the biological organism (human being) before the soul is breathed into it. His syllogism can be viewed in the table below.

	Opinion of Muslim theologians	Opinion of medical experts	Conclusion
1	It is the soul that perceives rationality.	Sensation and consciousness are functions of the brain.	The soul perceives rational thought through the assistance of the brain.
2	It is the soul which has control over all voluntary movements in the body.	It is the brain that arbitrates all voluntary movements in the body.	It is the soul which arbitrates all voluntary movements in the body through the assistance of the brain.
3	The sign that the soul is associated with the body is sensation and voluntary movement.	The sign that the brain is intact and healthy is the capacity to feel and move voluntarily.	The sign that soul is attached to the body is the functioning of the brain.
4	The sign that the soul has left the body is the permanent loss of sensation and voluntary movement.	Signs of brain-death is the irreversible loss of sensation and voluntary movement.	The sign that the soul has left the body is irreversible brain-death.
5	Involuntary movement is not an indication that the soul is attached to the body.	Involuntary movement is not an indication of the health of the brain, entirely or partially.	Involuntary movement is not an indication of human life or death.
6	The soul is not associated with the body until four months of the gestation period.	It is possible to destroy limbs at this stage whilst preserving/keeping alive the many cells that make up these limbs.	The life in cells is not an indication of life animated through the soul. They are not mutually exclusive.

The sixth syllogism requires explanation. In Islamic theology, ensoulment happens at 120 days of gestation. However, both Muslim scholars as well as medical experts recognise that there is movement in the foetus before 120 days. This foetus, which is not deemed to be a fully actualised human person in Islam, does not enjoy the same sanctity, rights and protection as an ensouled foetus. However, since it is a potential human being, it will be treated with dignity and would not be terminated without a valid medical cause. This does not take away from the fact that it is not a human person but a living organism with biological life in its limbs, organs, and cells. This leads Yasin to deduce that in the manner that it is possible to have a living human non-person at the beginning of life, it is also possible to have a living human non-person at the end of life where vital functions are mechanically maintained but the soul has departed.

All of the above leads Yasin to pronounce a general rule about the body-soul relationship. He says that “the attachment of the soul to the human body is subject to the body being at the service of the soul. To be at its beck and call and to accept its effect. God orders it to leave its temporary abode, which is the human body, when it can no longer carry out that responsibility” (Yasin 1986, 641).

Yasin’s model suffers from a number of flaws, and conceptual and clinical ambiguities. It may seem unfair to charge Yasin for not being clinically precise given that he is neither a physician nor is he arguing his case from a medical perspective. However, a theologically infused juristic model which purports to provide the religious justification to physicians needs to be practical and applicable in the real world. Yasin’s model is fraught with ambiguity to justify any real application. On the clinical front if we were to follow point four in the table through to its logical conclusion, it would mean that a person who has lapsed into post-hypoxic persistent vegetative state or someone who is “locked in” is not alive. However, no legislation declares these people to be dead nor does it allow one to procure their vital organs.

The real question that is being asked here is whether a person who has lost personhood ceases to be a person or even worse ceases to be alive? Some philosophers believe this to be the case, however, no such medical criteria or law exists to ascertain when personhood has been irreversibly lost. If we accept that the loss of personhood denotes the loss of the person, we may end up in a peculiar situation where we have living individuals (organisms) but not living persons. The moral question then will be how we deal with these living non-person individuals? Does “it” enjoy the same rights, dignity, and protection as the living person?

Furthermore, maybe unbeknown to Yasin, brain death, as opposed to popular understanding does not mean a complete cessation of all brain functions. In fact, even for a person who has been declared brain dead according to the neurological criteria, it can still be the case that brain functions such as neurohormonal regulations and certain electrical evoked potentials persist in the brain (Veatch and Ross 2015, 59). These are purposely excluded from the criteria since they were not deemed important to the people who formulated the criteria. For example, Henry Beecher, the Chair of the Harvard Ad Hoc Committee was aware that some neurological integrative reflexes that occurred in the spinal cord were not too different to the reflexes that occurred in the brainstem. But he was comfortable to discard the spinal reflexes as insignificant (Veatch and Ross 2015, 59). It should also be noted that there is no single way of determining death using the neurological criteria (see Veatch and Ross 2015, 55- 60 for more on this). The above criticisms may not prove to be too problematic for Yasin as he latches the presence or absence of the soul to the voluntary physical movements of the limbs, and such miniscule brain functioning is involuntary.

A major revelation from the Jahi MacMath case was that if a brain-dead person was kept on artificial life support machine long enough, some of their vital brain functions may return. This is not routinely done due to it not being cost effective and “medically futile”. Brain death is self-fulfilling, there is no need to keep one on a ventilator to see whether they regain some form of health; after all, the dead do not come back to life! However, there have been established cases of people declared to be brain dead making full recovery. (Padela et al. 2011, 68). These have been ignored as cases of misdiagnosis. This is very convenient and makes it very difficult to argue against the concept. Anyone who has been declared brain dead and remains so is truly dead. Anyone who has been declared brain dead but recovers vital brain functions is a case of misdiagnosis!

Two further future medical possibilities may throw a spanner in to Yasin’s model. Tethering the soul to brain activities may prove risky (as is latching any religious ideas to scientific discovery). If medical advancement in the future reverses brain death, what happens to the soul? What about a full head transplant? Successful head transplant has already been carried out on mice and rats, and it may be only a matter of time before this is extended to human beings! (Kentish 2017).

From the perspective of Islamic law, two operating legal maxims threaten to undermine Yasin’s scheme. “Certainty cannot be eroded due to a doubt” (Hussain 2016, 109). Brain death at best is a doubtful concept. There is no consensus that brain death is akin to the complete cessation of every single biological function and impulse in the human body. In declaring someone dead, Muslim scholars tread with care. If in doubt, they require the person/body to be left alone until the onset of putrefaction and decay which is a sign of sure death. Similarly, the legal maxim of “presumption of continuity” also goes against Yasin (Hussain 2016, 122). As opposed to Yasin’s above sixth syllogism, once it has been established that a foetus is alive, this assumption must continue until evidence for the opposite equally manifests, i.e. complete cessation of all external and internal movements, impulses, quivers and electrical brain signals.

Can there be any improvement to Yasin’s model? The question really is not about improvement but practicality. Yasin’s model provides a theologically infused juristic model for those wanting an answer to the issue of switching off life-support machines and subsequently organ retrieval. It only provides a religious justification for those who have already bought in to the idea of brain death or those who are sitting on the fence. It stems from a particular worldview and conceptualisation of the human being as an empirical entity which can be mapped, tracked and monitored. Furthermore, the switching off of a life support machine or retrieving organs is not a purely theological or philosophical question but a legal (read Islamically legal) question. The law requires strict demarcation in order to be properly enacted. A man on his eighteenth birthday is biologically and physically no different than he was on the eve of his eighteenth birthday. However, legally speaking the eighteen-year-old is endowed with certain rights and burdened with other responsibilities that was not required of him the previous day. For example, he is now able to consent to organ donation or be included in the presumed consent system. He can buy alcohol and give medical consent for surgery. In other words, where theologically or philosophically something may seem as a process, for the purpose of law, there needs to be a very clear line drawn between what is legal and what is not. Islamic law also works on the same assumption. Therefore, whether someone is dead or alive is not a theological question but a legal one. The bulk of Islamic law

does not operate on establishing epistemological certainty; rather that which is ‘highly probable’; on the basis of which a judge can condemn someone to death row. Yasin operates within these same assumptions.

Conclusion

The concept of brain-death creates a peculiar situation – a betwixt and between position – where the patient is dead from one perspective and yet has signs of the living from another such as warmth, heartbeat and breathing. Some have argued that the prognosis of death has been confused with its diagnosis; and the death of the organism is being conflated with the death of an organ (Rady, Verheijde, and Ali 2009). Questions arise whether the soul reside in any one organ or whether it permeate every single cell in the body.

This point can be demonstrated by looking at a series of examples. If it is argued that the soul permeates every single organ and cell in the body, then what can be said about the thousands of dead cells that humans have in the lining of their skin, breathing tracts, intestines and other body parts? Furthermore, if a person donates their blood which is then transfused to another person and soon after the donor dies, what would be said about their red blood cells flowing in the veins of the recipient? Are they dead or alive?

If it is argued that that soul does not permeate every cell in the body - rather its seat is the physical human heart - then where is the soul of the person who is going through open-heart surgery and their heart is missing from their body for a few hours? Can it be argued that a person who has a pacemaker fitted that the soul is mechanically assisted by this device?

The issue of brain-death organ retrieval is a deadlock situation borne out of competing worldviews and ontological understandings of what a human being is. For one Muslim theologian, Muhammad Na'im Yasin, based on a close reading of the discussions of mediaeval Muslim theologians juxtaposed with discussions from modern neuroscience, Yasin is convinced that death occurs when the brain is irreversibly damaged. This is the moment when the soul leaves the body. Since the person is dead due to having no soul, it is permissible to switch off the life-support machine and/or retrieve organs for transplantation if the deceased has given prior consent. The model is not without problems. Nevertheless, it is a good attempt to engage science and religion to address the shortage of organs for transplantation in the world.

Today, our souls live in a privileged world. We can force the soul to stay home by caging it with artificial respirators, life support machines, ventilators and drugs. In the absence of a clear definition of what the soul is, we have at our disposal a social construction of the soul. It is at the beck and call of the people who have the power of definition, and they will define and explain it according to their own theological assumptions, training, upbringing, anxieties and doxa.

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In preparation of this bibliography, I have ignored the Arabic definite article ‘Al’ as a result ‘al-Jurjani’ is to be found under ‘J’ and not ‘A’.

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