



Islamic Perspectives on Death by Neurologic Criteria

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Increased biomedical capacities have contributed to the medicalization of the dying process globally. For example, in the Middle East, societies which had little to no access to modern healthcare facilities a generation or two ago now have some of the most technologically advanced hospitals in their midst. This newfound access to the powers of modern medicine has certainly improved lives but also has fueled mis-given hopes in the restorative and/or curative powers of biotechnology when individuals near death. For example, experience suggests that the ability to maintain physiological functions via ventilators, vasopressors, and the like motivates family members to pursue aggressive treatment regimens for their loved ones despite diminished odds of success [1]. In this way, the newfound capacities of modern medicine impose upon the Islamic ethico-legal imperative of preserving life to generate greater numbers of Muslims meeting their death in the confines of sterile hospital wards rather than in the warmth of their own homes. Adding to this dynamic is the state of “brain death,” which further confounds individuals because their loved ones appear to maintain the traditional markers of life, namely breathing and heart-beat, despite clinicians suggesting that human death has occurred. In response,

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some Muslims hold onto their loved ones by requesting continued life-sustaining measures citing religious values, dictates, and edicts that reject “brain death” [2–4].¹

This narrative is not unique to Muslims. Other religious communities and indeed even secular voices are critical of brain death, and many around the world decry the medicalization of death and dying. Indeed, this volume is full of narratives challenging the entity and the cultural shift in death and dying that undergirds it. Yet, there are nuances within Muslim responses that deserve dedicated attention. The plurality of religious views on brain death, the variability of Muslim state legislation on the matter, and the different sources of disquiet various Muslim stakeholders express, paint a picture worth examining. This chapter, accordingly, delves into both Islamic perspectives and Muslim experiences surrounding brain death. We begin with empirical insights into how Muslim clinicians, patients, religious leaders, and other stakeholders are challenged by brain death. Next, we detail the dominant Islamic juridical perspectives on brain death and describe their ungirding ethico-legal rationale while also critically appraising these views by pointing out their shortcomings and ambiguities. We end the chapter by proposing an approach to death by neurologic criteria which accounts for the Islamic plurality on the matter and addresses the disquiet Muslim patients, clinicians, and families have with brain death in clinical practice.

1 Muslim Disquiet with Brain Death

As biomedicine has made liminal states between traditional markers of life and death possible, and medicalization of the dying process has become the norm, Muslim clinicians, patients and their surrogate decision-makers, as well as religious scholars have been challenged by the ethical discourse and clinical practices surrounding brain death. Muslim clinicians analyze religious bioethics discourses seeking answers about their ethical duties surrounding this new form of death, Muslim patients and their caregivers wonder what sorts of decisions can be made once this state has been reached, and Islamic jurists debate whether brain death is a legitimate threshold for death within Islamic law. These engagements with brain death reveal substantial concerns about the entity and its associated clinical

¹We have placed the term brain death in quotations to highlight that the term is a misnomer and controversial. “Brain death” is often used to denote that neurologic criteria for human death have been met. Death here refers to the death of the human being, not of the brain, because when neurologic criteria for death are met, the entirety of the brain may not have ceased functioning. Moreover, the term is a fact-value fusion. The medical fact that an individual who has met the neurological criteria for death will not be able to be revived to consciousness based on contemporary medical knowledge and biotechnology is fused with the value that such a state represents a life not worth living and/or maintaining. Both the medical facts here and the value attributed to it are contentious. Throughout the rest of the paper, quotation marks will not be used for the sake of maintaining flow; however the reader should hold these controversies in his/her mind.

practices. In what follows, we draw upon the empirical and academic bioethics literature to highlight this unease and confusion from various Muslim corners.²

1.1 Muslim Healthcare Providers

As a group, a significant proportion of Muslim healthcare providers who might be tasked with determining brain death, or certifying the death of their patient after the determination, are troubled by brain death. For example, a national survey of Muslim physicians in the United States ($n = 255$) reported that nearly half did not consider individuals determined to be dead by neurologic criteria to be dead legally, and half also did not consider them to be dead theologically. Moreover, respondents who were more religious had lower odds of believing brain death to signify the departure of one's soul from the body [5]. Relatedly, physicians who held religion to be an important part of their lives had greater odds of agreement with the belief that it is typically more ethically problematic to withdraw a life-sustaining treatment than to withhold it [6]. A smaller study of allied Muslim healthcare professionals ($n = 91$), including chaplains, found that half of participants felt that families should be given choice over whether brain death evaluations are performed because of religious and ethical conundrums associated with the determination [7].

As can be gleaned from the above, Muslim healthcare providers' unease with brain death occurs at both the conceptual and practical levels. Dr. Mohammed Rady, a critical care physician at Mayo Clinic represents one prominent voice among this group and levels his critique at the use of neurologic criteria to determine death. From a religious perspective, he contends that brain death cannot be equated with death because, according to him, the Qur'an and Prophetic traditions unequivocally characterize death as a single, irreversible event where the soul leaves the body [8, 9]. In his view, because individuals who are declared brain death retain somatic integration, either intrinsically or via supportive medical technology, such individuals cannot be considered dead because they do not meet the biological definition of death, and neither can be considered dead by religious criteria because the soul may still be attached to the body [9].

1.2 Islamic Jurists

Islamic jurists are similarly confounded by brain death, as they struggle to resolve its biomedical nature and its legitimacy as death according to the standards of Islamic law. While a fuller review of Islamic juridical perspectives will be provided in the next section, herein we share the critiques of a few prominent scholars to highlight points of contention.

²The review here is not a systematic review of the extant literature, rather we have handpicked certain studies to illustrate the phenomenon of Muslim stakeholder disquiet with brain death.

In response to the increasing calls for deceased organ donation programs and clarity over brain death in past few decades, Shaykh Muhammad Sayyid Tantawi, the former rector of Al-Azhar and grand Mufti of Egypt, declared the matter of ascertaining the occurrence of death to be a medical and not a religious affair [10]. On the other hand, Shaykh Tantawi's contemporary and colleague, Shaykh Ali Gomaa, also former Grand Mufti of Egypt, sees the issue not to be about applying the label of death to a physiological state, but about ontology and morality. He notes "it is not just a technical medical issue, it's also a human and moral issue... doctors cannot say it is only for them alone to decide. We [religious scholars] must get involved...the issue is not about definitions [of death], the issue is about uncovering the truth [reality] about something" [10], p. 73. The American Islamic jurist, Shaykh M. Amin Kholwadia also holds that physicians should not be given the authority to discern criteria for death; rather criteria must be based on religious sources. He further notes uncertainties surrounding the determination of brain death, which renders it insufficient grounds for determining human death in Islamic law [11]. Other jurists heatedly debate whether the brain is the "seat" of the soul, holding this to be a prerequisite for legitimating brain death within Islamic law [12–14].

These varied perspectives exemplify debates among Islamic jurists about the validity of neurologic criteria to determine death in Islamic law, as well as whether religious scholars or medical experts have the primary role in defining death. Generally speaking, scholars fall into one of two camps; some legists and juridical councils consider brain death to satisfy Islamic legal thresholds for declaring death and implicitly give medical science a role in determining death criteria, while others assert that the traditional criteria of cessation of heartbeat and breathing should be maintained as markers for human death as they are both biomedically and religiously sound [4, 15]. Critically, however there appears to be a near-consensus, at least among Sunni jurists, that when neurologic criteria for death are met, it is religiously permissible to withdraw and/or withhold life-sustaining treatment [16].

1.3 Muslim Patients and Their Surrogate Decision-Makers

Regrettably, there has been little empirical research on Muslim patient and caregiver attitudes towards brain death. The scant studies that exist suggest that these stakeholders wonder what brain death actually represents from a medical perspective, whether brain death represents true death in Islam, and whether withdrawing and withholding life support is religiously licit when neurologic criteria for death are met. Though systematic research remains wanting, our experience as religious advisors and ethics consultants³ to Muslim patients and families concurs with these studies. Muslim community members are confused by the term "brain death." To

³Both authors have religious and medical training and have been serving as ad hoc religious bioethics consultants to the Muslim community in their respective nations. Moreover, AIP is also a trained clinical medical ethics consultant and as such provides formal ethics consulting to Muslim patients and families in hospitals around the US.

them, life is a miracle that pervades the entire body, and they find it odd to privilege one organ over others in defining the end of human life. Moreover, they wonder whether the healthcare system mislabels patients as “brain dead” when they are simply in a deep coma. Qur’anic narratives regarding the people of the cave who were thought to be dead but were simply in a state of suspended animation and deep sleep for hundreds of years gives credence to these concerns voiced by Muslim community members and religious scholars alike [17, p. 705, 18, pp. 346–347]. Moreover, the ‘discovery’ of a new physiological state close to death, termed a “minimally conscious state,” fuels fears that one-day biomedicine will uncover their folly in labelling people dead who were yet living. These concerns feed into questions of moral duty as families and surrogate decision-makers are unsure whether they are called to live out the overarching objective of Islamic law, the preservation of life, *ḥifz al-nafs*, in advocating for continued medical treatment despite the determination of brain death, or whether they are religiously permitted to withdraw and/or withhold. This confluence of concerns about the medical reality of brain death alongside the moral duties owed to an individual declared brain dead has Muslim families and surrogate decision-makers reaching out to those with dual expertise in medicine and in Islamic law for guidance.

2 Islamic Juridical Views on Brain Death

All Islamic jurists agree that human death is marked by the soul leaving the body [19, p. 94, 20, p. 367, 21, p. 157]. While there is no ambiguity around this theological notion of death, there is no consensus on how the soul’s departure ties in with determination of death. Are there assured physical correlates of this metaphysical event? By declaring brain death, is the physician attesting to the departure of the soul? Is death in Islamic law to be based on local custom or on expert testimony? These are but a few of the questions that Islamic jurists need to resolve when considering brain death.

Generally speaking, Islamic jurists have fallen into two camps regarding whether the soul’s departure has physical signs. One camp considers the soul to be a fully immaterial entity and, as such, it is not possible to perceive how it is tied into the physical body when designating criteria for death. Because of this uncertainty, brain death is insufficient grounds for determining human death, rather classical criteria of cessation of heartbeat and breathing should be maintained as markers of human death.⁴ The other camp holds that there are physical manifestations of the soul’s departure, and these should be the basis of death criteria. On this basis, leading

⁴For some the cessation of breathing and heartbeat are indicants that the human body can no longer sustain its connection to the soul as the body is moving into a state of decomposition. Hence this camp infers the departure of the soul rather than identifying its signs. It is also important to note that breathing is closely related to the soul in Semitic languages as the two words share the same root letters, and hence the activity of breathing is often assumed to be related to the presence or a function of the soul. Finally, the cessation of heartbeat and breathing are held to be universally common criteria for death, rooted in human experience across cultures, not necessarily scripture.

Islamic jurists take three different approaches to designating death criteria, with each view tying into whether the soul's departure is associated/correlated with physical manifestations [22, pp. 280–283]. We describe these three views along with the main jurists and juridical bodies who align with each view below. The first camp, the 'traditional' one, affirms circulatory-respiratory criteria as indicants of human death, the second group accepts neurologic criteria as sufficient for human death determination, and the third group considers brain death to be an in-between state of unstable life where the human being has a moral status akin to a dead individual for some purposes and to a living individual for others.

2.1 The "Traditional" Camp: Brain Death Does Not Represent Human Death

Death according to this approach is the permanent, irreversible cessation of all biological functions that sustain a living organism. Islamic jurists who support this view resolve that there are no reliable physical correlates to the departure of the soul. Rather, they associate criteria for death to signs that the body has begun to decay irreversibly, and accordingly, the body can no longer carry out the commands of the soul, hence for all intents and purposes, the soul is assumed to be disconnected from the body and burial rituals commenced.⁵ Historically, human death was determined through external examination for signs of rigor mortis and putrefaction. These somatic criteria are no longer practical because of the societal need for timely diagnosis in hospital and hospice settings. Those who are advocates of the traditional definition of death associate death with the irreversible loss of vital fluid flow as cessation of heart and lung function, determined by apnea and absence of pulse because after this point, the body will begin to decay irreversibly. Death is therefore associated with circulatory-respiratory collapse.

As a corollary, the patient is counted among the living so long as circulation and respiration (assisted or unassisted) is maintained. Consequently, brain death is unacceptable as a threshold for death declaration because circulatory-respiratory function continues, albeit with technological assistance [17, p. 718]. Furthermore, because the metaphysical occurrence, i.e., departure of the soul, has no definitive physical correlates, speculation about what happens when an individual has reached

⁵It bears mention that there are statements from the Prophet Muhammad that indicate that the soul's connection to its host body may not fully be severed upon death. For example, some narrations tell of the dead (or newly dead) being able to hear happenings around their host body or even perceive pain. The Prophet said, "When a dead servant is put into his grave (buried) and his fellows (relatives and those who took part in his burial) leave him, he hears the sound of their footsteps." [66] also some have interpreted that the dead feel pain from the prophetic tradition "Breaking the bone of a dead person is the same as breaking his bone when he is alive." [67, 68]. Other narrations discuss how the body will be resurrected such that the soul can reinhabit it, and as such suggesting a connection is maintained. "(No doubt), people will be resurrected on the Day of Judgment barefooted, naked and uncircumcised." Then, the Prophet recited (what means): {As We began the first creation, We (God) will repeat it.} [Q 21:104]." [66]

the physiological state of brain death is inadmissible for assigning ‘new’ death criteria [22, pp. 284–287]. Said another way, indicants such as breathing and circulation are definitive signs of a living person, while neurologic criteria for death are ambiguous as to whether they represent the soul’s departure from the body.

Examples of juridical councils that fall into this include the Kuwaiti Awqaf Ministry, which in 1981 indirectly considered brain death impermissible, whilst adhering to the traditional approach by ruling that an individual remained alive if circulation and respiration continued, even if mechanically assisted [23, p. 154, 24, p. 41, 25]. Similarly, in 1987, most Islamic scholars of the Islamic Fiqh Academy of Muslim World League [IFA-MWL] held decree that brain death criteria were not equivalent to circulatory-respiratory criteria for human death and upheld the latter as in accordance with Islamic law [11, 26, p. 216, 27, 28, p. 8].⁶

2.2 The Brain Death Is Human Death Camp

According to this view, the soul is the primary integrator of the human organism, and its metaphysical departure has physical correlates that are observed when someone is declared brain dead. Given that death is theologically tied to departure of the soul and that in the Islamic tradition the presence of the soul is what determines personhood, certain physical and mental abilities are markers of the soul’s presence in the body. These include higher brain functioning related to sentience, *al-ḥiṣṣ*, and voluntary movement, *al-ḥarakat al-irādiyah*. The irreversible loss of these bodily capacities is associated with loss of critical functions of the brain, and signals the departure of the soul from the body [18, pp. 350–352, 29, pp. 656–658]. Additionally, the individual meeting neurologic criteria for death is equal in functionality to the individual meeting circulatory-respiratory criteria for death because neither

⁶Main Islamic bodies which adhere to this are:

- Kuwaiti Awqaf Ministry 1981, Lajnat al-Fatwā bi Wizārat al-Kuwaitiyyah, details can be found in [31, pp. 665–666].
- Some members of the IFA-MWL, 1987 tenth Session, were strict adherents to this view, however the final conclusion of IFA-MWL was according to the third camp, i.e., the ‘brain death is unstable life’ group (see later) [26, p. 216].
- Egyptian Awqaf Ministry, see [69, p. 3712].
- Other Islamic bodies include; Islamic Fiqh Academy India at the 16th Fiqhi Seminar 2007 in Azamgarh [70].

South Africa: Majlis al-Ulama in 1995 [71]. Proponents of this view include the Islamic scholars, Islamic legist Dr. Tawfiq al-Wāṭi from Kuwait, the Egyptian jurist Shaykh Badr al-Mutawallī ‘Abd al-Bāsiṭ, the Muftī of Tunis, Shaykh Muḥammad al-Mukhtār al-Salāmī, the great Saudi Islamic scholar Shaykh Muḥammad al-Mukhtār al-Shanqīṭī, the Grand Muftī of Syria Shaykh Ramaḍān al-Būṭī and many others, see: [22, p. 262, 72].

Among the Shī’a Islamic legists; The Iranian Grand Ayatollahs, Mohammad Taqī Bahjat Fūmanī and Huṣayn Waḥīd Khurāsānī, and the Iraqi Grand Ayatollah al-Sayyid ‘Alī al-Ḥusaynī Sīstānī. Most of the Shī’a clerics contend that brain death is insufficient to consider a person dead [73, pp. 95–96]

physiological state retains capacity for the soul to perceive and act through the body. Consequently, both states are acceptable as death proper in Islamic law.⁷

One of the most influential bodies of Islamic bioethical deliberation, the Islamic Fiqh Academy (IFA-OIC) of the Organization of Islamic Cooperation adheres to this view.⁸ The IFA-OIC in particular carries significant weight in medical and legal circles because it brings together jurists assigned to the council by their respective governments or through official recommendations of council members, includes medical experts, and has representation from jurists that span the various schools of Islamic theology and law [30]. In 1986, the IFA-OIC held that a person is pronounced legally dead and consequently, all dispositions of the Islamic law in case of death apply if one of the two following conditions has been established [28, 31, 32]: (i) there is total cessation of circulatory and respiratory functions, and doctors have ruled that such cessation is irreversible; (ii) there is total cessation of all cerebral functions and experienced specialized doctors have ruled that such cessation is irreversible and the brain has started to disintegrate [33]. Some Muslim countries, including Malaysia, Bangladesh, Turkey and Iran, have adopted these two standards for human death declaration which accords with the enactment of the Uniform Determination of Death Act (UDDA) in the United States [28, pp. 12–14, 34].

⁷The main Islamic bodies which adhere to this view are:

- IFA-OIC The Council of the International Islamic Fiqh Academy of the Organization of the Islamic Conference, holding its second session in Jeddah, Saudi Arabia on 10–16 Rabīʿ al-Awwal 1406H (22–28 December 1985) was then reconvened, holding its third session in Amman, Hashemite Kingdom of Jordan, on 8–13 Šafar 1407 h (11–16 October 1986).
- Other Islamic bodies include European Council for Fatwa and Research (ECFR), South Africa: Majlis al-Shura al-Islami in 1994, United Kingdom: Muslim Law Council 1995 and Indonesia: Council of Ulama 1996 [71, 72].

Proponents of this view include the following Islamic scholars: the Syrian jurist, Shaykh Muṣṭafā al-Zarqāʾ, the Saudi jurist Shaykh Muḥammad Ibn Jubayr, the Jordanian Islamic legists, Dr. ʿUmar Ibn Sulaymān al-Asqhar and Dr. Muḥammad Naʿīm al-Yāsīn, the Egyptian Islamic scholar based in Doha, Dr. Yūsuf al-Qaraḍāwī and others, see: [22, p. 281]

Among the Shīʿa Islamic legists, a number have delegated such determination to medical professionals, thereby accepting the brain death criterion eg. the grand Ayatollah of Iraq Moḥammad Iṣḥāq al-Fayāḍ and the Iranian grand Ayatollah Naṣīr Makārim Shayrāzī. One very authoritative Shīʿa cleric, grand Ayatollah Ḥusayn ʿAlī Muntazirī considers death as being defined by the medical professionals. Interestingly the Parliament of Iran enacted a law on April 5, 2000 entitled: “Transplant of Organs from Deceased Patients or Patients with Evident Brain Death” The law was neither approved nor rejected by the Guardian Council and thus entered into force in accordance with Article 94 of the Constitution an Explanatory Note issued by the Legal Department of the Judiciary on 12 May 2008 which states that brain death is synonymous with death and entails all legal consequences of death [73, pp. 106–109]

⁸These organizations bring together medical scientists and Islamic legal scholars that are transnational in scope. They represent a plurality among the Islamic schools of law and theology. Islamic ethico-legal deliberation around bioethical challenges faced in the Muslim and non-Muslim world are addressed. As a result of this inclusivity, the verdicts issued by these organizations carry significant weight in medical and legal circles because these organizations are recognized as the forefront of Muslim efforts to address ethico-legal challenges brought forth by modern technological advances [4].

2.3 The Brain Death Is Unstable Life Camp

There are scholars who are, like the camp above, of the opinion that the presence of the soul is what determines personhood and certain physical and mental abilities are markers of the soul's presence in the body. Yet, they are not ready to discard traditional markers for human death for multiple reasons including the lack of certainty around neurologic criteria for death, and unease over the intrusion of medical specialists in determining new criteria for death that seem to go against commonplace understandings. Consequently, they do not equate brain death and circulatory-respiratory criteria for death proper in Islamic law. Rather, they consider brain death to represent a physiological state between life and death, where life support need not be continued [22, pp. 289–293, 35, pp. 668–669].⁹ The grounding for this in-between state is a construct within Islamic law, *al-ḥayāt ghayr al-mustaqirrah* (unstable life), which was traditionally used to resolve moral culpability for homicide in cases where the assaulted individual has already suffered an injury that may or may not be life threatening. Some jurists further suggest that organs may be procured after brain death is declared, while others do not [28, p. 6]. Human death is thus resolved into a functional legal construct with two different subtypes; the first subtype is associated with brain death, which allows for some moral rulings related to the death of the human being to apply, e.g. withdrawal of life support, while the second subtype is associated with death proper, *al-mawt al-ḥaqīqī*, where all rulings of death apply such as those related to burial, distribution of what is bequeathed and inheritance [22, pp. 289–293, 29, pp. 668–670, 35, pp. 668–671]. According to this camp, there are multiple different purposes that the pronouncement of human death serves, and different moral justifications for death behaviors.¹⁰ Each of these purposes needs to be analyzed through the prism of Islamic law and then criteria can be adduced [36].

⁹Among the Shī'a Islamic legists who hold a similar view, is grand Ayatollah Nasīr Mukārim Shayrāzī, who makes a distinction between the brain death criterion for the purpose of organ transplants, and the Sharī'a criteria of death for other legal or religious purposes such as power of attorney or burial [73, pp. 96–97].

¹⁰The term “death behaviors” has been borrowed from Dr. Robert Veatch who describes not only that some behaviors traditionally associated with death can be unbundled but also that other behaviors (including organ procurement) must continue to be associated with death [45]. (See Veatch 2005) Death behaviors in the Islamic tradition would include ritual acts/ practices which normally occur after death is announced, such as initiation of the three-day ritual mourning, ritual washing, *ghusl*, shrouding, *kafan*, funeral prayer, *janāzah*, distribution of inheritance, *wirātha*, burial, *dafan*, and all other associated actions after death. They also extend to those actions which are deemed permissible after death such as retrieving organs for organ transplantation and withdrawing life sustaining treatment.

The following Islamic bodies adhere to this approach; the Islamic Organization for Medical Sciences (IOMS) in a 1985 and 1996 meeting ¹¹ and the Islamic Fiqh Academy of Muslim World League [IFA-MWL] in 1987 [28]. ¹² It is claimed that this view is the dominant one in Muslim circles because ‘many (Islamic scholars) concede that a brain-dead person is dying but will not accept that he is dead’ [37].

3 A Critical Appraisal of Juridical Contentions Over Brain Death

Debates within Islamic juridical circles on death by neurologic criteria need both updating and deepening in light of recent biomedical knowledge. As highlighted below, there are conceptual as well as practical issues that limit the clinical applicability of some of the views [4]. Islamic jurists are required, as part of their research into a matter prior to issuing a ruling, to have an accurate understanding of the main issues involved, their social implications, and their legal relevance. Indeed, as the maxim goes, *al-ḥukmu ‘alā al-shay’i’ far‘un ‘an taṣawwurihi*, passing judgment on something is dependent on its proper conception [38, p. 314]. Towards that end, we will summarize the main points of contention within the juridical discourse over brain death. In our reading they relate to the following:

1. How does the metaphysical nature of death relate to the physical determination of it?
2. Which brain functions, when lost, signal human death?
3. What is the criterion for irreversibility to declare brain death?
4. What level of certainty is required to determine human death?

3.1 How Does the Metaphysical Nature of Death Relate to the Physical Determination of It?

We have noted above how views on this question generally inform juridical perspectives on neurologic criteria for death. In this section, we will focus on a couple of additional questions based on the juridical decrees noted above. To begin with, Islamic theologians, by and large, view the soul and body as separate entities. The Qur’ān and prophetic tradition relate a dualist conception of soul and body which is especially relevant to conceptions of death [39]. Common secular understanding

¹¹The IOMS revisited the issue in 1996 after they sent three members to participate in an international bioethics conference. These members reported back to the IOMS, this time with some eminent Islamic Scholars attending the meeting including Shaykh Yūsuf Al-Qarḍāwī, Shaykh Khālīd Al-Mathkūr, Professor of Islamic Law in Kuwait University, Dr. Ibrahīm ‘Alī Ḥasan, the Vice President of the High Government Council in Egypt, and Dr. ‘Abdullah Al ‘Īsa, Vice President of the High Court of Kuwait [33, 74].

¹²Tenth Session second Declaration of IFA-MWL, see [26].

advances a monist approach where the mind is simply a manifestation of the brain, and the body and mind are the same entity or single substance. In the monist view, the mind is an extension of the natural world, explainable in purely physical terms. The faculties of the mind, such as volition and sentience, are reduced to the physiological and not attributed to a soul. Whereas in Islam, these higher mental faculties are those attributed to the soul and not just the body.

The IOMS expressed the view that the determination and identification of the signs of death have always been a medical matter and accepted physician testimony to rule that cessation of brainstem functions reflects the death of the patient [29, p. 655, 659]. Similarly, the IFA-OIC declared brain death to meet the standards for legal death in Islam. These legal judgments have theological implications for a dead body in that it is considered to be one where there is a severed connection to the human soul [31]. Both rulings implicitly suggest that a brain-dead individual is one in whom there is no soul. Yet, at these council meetings, there was little discussion regarding questions that may ensue such as how the metaphysical truths about the soul associate with our biomedical understandings, and how Muslim theologians intend to tie vital functions of the brain to vital functions of the soul. At the IOMS in 1985, a few experts suggested that the brain was the seat of the soul, however it was decided to table such theological discussions to the future [18, pp. 350–352, 29, p. 655, 659].

The writings of classical jurists may provide some foundations for such deliberation. For example, the great Damascene jurist Ibn al-Qayyim al-Jawziyya (d. 751/1350)¹³ discusses the human soul and its relationship to the body's functions in his discussion of the fetus. He argues that the fetus' life has two periods [40]:

1. *qabla-nafkh* (pre-ensoulment): where it is similar to plant life and the body grows and is nourished.
2. *ba'da-nafkh* (post-ensoulment): where it has the capacity for sentience, volition and voluntary motion since the human soul is now linked to the body.

¹³ Ibn al-Qayyim al-Jawziyya was an important medieval Damascene Sunni Islamic jurisconsult, theologian, and spiritual writer. He belonged to the Hanbali school of Islamic jurisprudence, of which he is regarded as one of the most important jurists.

He thus asserts that bodily functions such as growth and nutrition can exist before ensoulment and without linkage of the soul to the body.¹⁴ *Ipsa facto*, if and when the soul leaves the body, these biological functions are not indicants of soul's presence, and as we know today, can be maintained through artificial means. Other theologian-jurists, such as Imam al-Ghazālī (d. 505/1111),¹⁵ and metaphysicians, such as Ibn Sīnā (d. 427/1037),¹⁶ comment on similar relationships where they attribute different types of functions to the developing fetus based on whether and when the human soul becomes linked to the physical body [41, 42]. These sorts of discussions suggest that the traditionalists need to explain why it is necessary for there to be permanent, irreversible cessation of *all* biological functions leading to irreversible bodily degeneration to declare death, when some classical scholars acknowledged that some biological functions occur independent of the soul.

Somewhat related is the practical concern that the IFA-OIC ruling requires brain degeneration for declaration of death. It is unclear why degeneration is part of the criteria when certain brain activity may occur without presence of the soul. Moreover, there is no similar certification of degeneration process pursued when circulatory-respiratory criteria are applied. This condition presents practical problems because brain death assessment protocols do not require verification of brain degeneration via biopsy or imaging, nor by assessing whether biochemical markers of brain degeneration are present in the bloodstream [43]. The criteria laid out by the IFA-OIC for acceptance of neurologic criteria for death as death in Islamic law

¹⁴ al-Jawziyya further elaborates in his *al-Tibyān*: If it is said, does the fetus, *al-janīn*, before ensoulment have movement and perception or not. It will be said, that it has the movements of growth and nutrition just like plants, but these movements of growth and nutrition are not voluntary. When it is ensouled then voluntary sensory movements contribute to the movements of growth and nutrition [40]. Similarly, al-Jawziyya's teacher, the great Ḥanbalī polymath, theologian and judge, Ibn Taymiyya (d. 728/1328) asserts the same: Life is of two types; plant life, and animal life which is particular to sensory perception and voluntary movement, whereas plant life is that of growth and nutrition [75, p. 56]. The great Egyptian polymath and ḥadīth expert, Ibn Ḥajar al-ʿAsqalānī (d. 852/1449) claims that the first organ to develop is the liver because growth and nourishment arises from it which provides the strength to the body, some suggest that [the liver] is the requisite for the development of the natural system because growth is required first. Sensory perception or voluntary movement are not dependent on it, because at this stage it is like a plant. Rather, the capacity for sensory perception and voluntary, willed movement is associated with the soul (which comes after) [76, p. 482].

¹⁵ Abū Ḥāmid Muḥammad ibn Muḥammad al-Ghazālī considered to be the *mujaddid*, reviver, of his age, a Sunnī, Shāfiʿī, Ashʿarī scholar, jurist, rationalist, and ṣūfī master of Persian descent. His book, the *Iḥyāʾ ʿulūm al-dīn*, *The Revival of the Religious Sciences*, was well received by Islamic scholars.

¹⁶ Ibn Sīnā, often known in the West as Avicenna, was a Persian polymath who is regarded as one of the most significant physicians, astronomers, thinkers and writers of the Islamic Golden Age and the father of early modern medicine. He is arguably the most influential philosopher of the pre-modern era and was a Muslim Peripatetic philosopher influenced by Greek Aristotelian philosophy. Of the 450 works he is believed to have written, around 240 have survived, including 150 on philosophy and 40 on medicine. His most famous works are *The Book of Healing* (*al-Shifāʾ*), a philosophical and scientific encyclopedia, and *The Canon of Medicine*, a medical encyclopedia

appear to lack conceptual and clinical clarity, thus giving little guidance to Islamic theologians and Muslim clinicians.

3.2 Which Brain Functions, When Lost, Signal Human Death?

This question directly addresses the interface of biomedicine and religion. The first part of the question is attended to by the deliverables of neuroscience, for neuroscience would tell us not only what the physiological functions of brain matter are but also which of these functions are most critical to the manifestation of life in the human body. The latter half of the question relates to death, which is another matter altogether, and the crux of the matter this chapter is trying to shed light upon. Fatāwa, ¹⁷ such as those of the IFA-OIC, conceive of brain death as the vital functions of the brain having ceased, and when this happens legal death in Islam is fulfilled. However, their ruling does not explicitly denote which conception of brain death, brainstem or whole-brain, is aligned with Islam and accordingly which criteria are to be used in declaring human death [30].

Some argue that consciousness is an important determinant of an ensouled life. They point to classical *fiqh*, substantive law, literature which contains many cases where signs suggestive of consciousness are important determinants of an ensouled life, and the permanent loss of consciousness is *legal death*, *al-mawt al-hukmī*.¹⁸ This understanding of permanent loss of consciousness as human death is deduced broadly from the descriptions of death asserted by jurists as permanent loss of willed (voluntary) action, *ḥarakat ikhtiyāri*, coherent speech, *nutq*, and sight, *ibṣār* [18, p. 352, 24, pp. 43–44, 29, pp. 656–660]. Since jurists back then differentiated between somatic signs of permanent loss of consciousness from those related to the decomposition of the human body, there is precedent to do so today. One could argue that permanent loss of consciousness could be a legitimate marker of death in Islamic law, standing alongside or replacing other indicants. More significantly, one could then generate a conception of brain death that is attached only to the capacity for consciousness, and consequently develop neurologic criteria for death that assess whether or not there remains capacity for consciousness. One of us (RR) makes this argument elsewhere [44].

¹⁷ Fatāwa is plural for fatwā and is an authoritative, but nonbinding legal opinion or interpretation on a point of Islamic law given by a qualified legal scholar (known as a muftī) or collectively, comprising a number of Muslim scholars with an interdisciplinary team of biomedical scientists. A fatwa is usually issued in response to questions from individuals or Islamic courts.

¹⁸ Classical Muslim jurists describe a state of permanent loss of voluntary movement, sentience and volition when a person has received injury after an assault or when they are in a state after a fatal illness. They allow for certain legal rulings which are associated with death enactments. If there is any movement, then this is described as being involuntary, not willed nor from conscious effort. This state is described to be synonymous to the normative state of *ḥarakāt al-madhbūh* (the involuntary reflexive movements seen after slaughtering an animal). In the state of *ḥarakāt al-madhbūh* the animal is legally treated as dead (*al-mawt al-hukmī*) [22, pp. 290–294, 77, p. 106, 78, p. 145]. For other examples and detail see: [79].

From the available juridical rulings, it remains unclear what activity or functions in the human brain is judged to be nonessential, not critical, or inconsequential and thus should not be assessed by a brain death evaluation, and is theologically and legally acceptable to persist after the declaration of death.¹⁹ On a practical level, the whole-brain criterion requires permanent cessation of all brain functions for human death, yet many patients who are declared dead using clinical tests for this standard continue to have electroencephalographic activity and hypothalamic functioning [45, p. 482, 46, 47].

3.3 What Is the Criterion for Irreversibility to Declare Brain Death?

In Islam, human death is associated not only with the metaphysical departure of the soul from the body but also with changes in the physical body that lead to disintegration and decay. While the declaration of death occurs at a specific moment in time, one could argue that biologically, death signals the onset of a process of gradual decomposition and decay of the body. As noted previously, from a theological perspective, death refers to the separation of the soul from the body; however, the Islamic tradition is ambiguous as to whether there are physical correlates to the severance. Islamic jurists thus rely on the physical indicants that the body is moving towards permanent disintegration. A key aspect of these physical indicants is irreversibility, meaning that they must indicate that the onset of the process of disintegration and decay is irreversible.

The IFA-OIC explicitly states that Islamic law permits the declaration of death when all vital functions of the brain cease *irreversibly* [31]. Yet irreversibility is not defined. While the prognosis of those declared brain dead is very poor, as none of these individuals will regain consciousness despite continued life-sustaining treatment based on the current state of biomedicine, we do know that some brain functions may return. Neuroscientists note that brainstem reflexes may reappear after initial absence in brain-dead individuals, and a proportion of the brain may continue to function [48–50].

If irreversibility is a key aspect of what makes neurologic criteria for death acceptable in Islamic law, then it must be made clear what irreversibility indicates. Irreversibility is not a singular notion; rather, it can refer to many different states (as discussed elsewhere in this book). For example, it can refer to the state when functions of the brain will not naturally return, or when they cannot be reversed due to

¹⁹Elsewhere one of us (AIP) has argued that there are serious gaps in contemporary medical understanding and clinical diagnosis of brain death and its endorsement as human death in the Islamic faith. These gaps pertain to: (1) the retention of residual brain functions; (2) the recovery of some previously ceased brain functions; (3) the absence of whole brain degeneration and necrosis; and (4) the uncertainty of medical tests and bedside examination in determining this condition with reasonable accuracy [4].

limitations in our biomedical capacities, or alternatively when they will not be reversed because it is deemed *legally* or *morally* inappropriate to intervene [51].

If irreversibility means physiologic irreversibility, then one can understand why the IFA-OIC attached verification of the disintegration of the brain to their ruling. Physical signs of disintegration would attest that the absence of brain functions is irreversible. Irreversibility therefore equates with permanence because functions of the brain will not naturally return, nor can they be reversed due to limitations in our biomedical capacities. As noted above, some brain functions remain and others can return when a brain-dead patient is kept on life-sustaining instruments. If irreversibility means permanence, then these individuals cannot be said to be dead, but rather just imminently dying [50, 52].

If reversibility means the latter, then it is not whether the body or brain circulation and function can be resumed (because it can in some cases), but rather, whether the situation warrants reversal by clinicians, i.e., whether it will be. If it will not, then this state is also deemed permanent as it is morally or legally appropriate not to reverse.

Physiological death is not an event at some precise moment in time, but a process. The common contention revolves around the moment at which death can be declared. Islamic jurists need to be prescriptive about this juncture. Is death declaration justified in Islamic law when brain tissue begins to degenerate and brain functions *cannot* be reversed, or it is at a stage where physicians *will not* to try to reverse the clinical scenario because of various moral and legal considerations? Moreover, what level of certainty is required for physicians to make the diagnosis of brain death?

3.4 What Level of Certainty Is Required to Determine Human Death?

Detractors of brain death argue that brain death determinations are uncertain and, as such, insufficient as thresholds for death in Islamic law. Rather, the diagnosis is speculative, uncertain and doubtful [17, pp. 712–713, 18, pp. 349–350, 53, p532]. The Islamic ethico-legal maxim, certainty is not eliminated through doubt, *al-yaqīn la yuzūlu b'il-shakk*, would support the idea that brain death does not suffice for declaration of death. The patient is alive, and we are certain about this due to continued breathing and heartbeat, and death is uncertain. Other ethico-legal maxims, such as the original state remains on that what it was, *al-aşlu biqā'a ma kāna 'alā ma kāna*, can be used to further ground this view [54, p. 263]. *Istişhāb*, presumptive continuity, a formal source in Islamic law, also suggests continuity of the original ruling of what is agreed upon by everyone, that the person is alive, and not upon the ruling in which there is dissension, i.e., that the person is dead [17, pp. 712–713, 18, pp. 347–348].

What is agreed upon is that the Qur'ān and prophetic tradition are not explicit in the criteria for death, and it is therefore left to *ijtihād*, juristic effort, to deduce rulings from these texts. Rulings derived from *ijtihād* are considered *zannī*, speculative or approximate, which is an epistemic category distinct from *qaṭ'ī*, definitive or

conclusive knowledge [55, p. 14]. Often jurists seek certainty, *al-yaqīn*, yet for legal purposes dominant probability, *ghalabat al-zann*, is considered sufficient to judge on a matter [29, pp. 645–659, 56, p. 155–170]. *Ghalabat al-zann* is formally defined as a situation where there is a possibility of two conclusions, but one is preferred above the other due to its higher likelihood based on formal, empirical, or other evidence [57, p. 4]. The difference between *yaqīn* and *ghalabat al-zann* is that the latter refers to an outcome that is preponderant when the remaining contrary outcome is minimized, very unlikely, and can be discarded, while the former requires proof that the other state is impossible [58, p. 144, 59, p. 77]. In other words, even though the remaining outcome can be dismissed on the basis that it is very unlikely, it cannot be excluded entirely, whereas for the epistemic level of certainty the remaining possibility must be excluded entirely.

Islamic juridical bodies stipulate *certainty* in determining brain death, but do not specify whether they mean true certainty *al-yaqīn* or *ghalabat al-zann*. If they mean the former, diagnostic testing can almost never conclusively judge a certain state is present with 100% positive predictive value. The threshold for certainty and declaration of death by neurologic criteria requires further elucidation.

4 Death in the Muslim Mind

Thus far, we have reviewed and critically appraised leading Islamic juridical perspectives on brain death and described how they relate to metaphysical understandings with biomedical approaches to the declaration of death. In this section, we propose an approach to brain death that accounts for Islamic plurality and addresses the disquiet Muslim patients, clinicians, and families have with brain death in clinical practice (see Table 1). All Islamic theologians and jurists, a large part of the Muslim public, agree upon the metaphysical or ontological representation of death as deduced from the Qur'an and Sunnah, that death represents the soul's functional separation from the human body. This theological notion or knowledge is given 'life' through human language, symbols and behaviors. For example, a semantical representation of death can be that the person has 'gone', 'departed this world', and

Table 1 Islamic views on death criteria and purposes

Death "type"	"Traditional" camp	"Brain death is human death" camp	"Brain death is unstable life" camp
Ontological death	CR	BD	CR
Semantic death	CR	BD	CR
Biomedical death			
• Withdrawal of life support	BD	BD	BD
• Retrieval of organs	CR	BD	Diversity of views
• Autopsy	CR	CR	CR
• Burial	CR	CR	CR

CR circulatory-respiratory criterion, BD brain death criterion

‘moved on.’ Muslim cultural behaviors representing death include the rapid burial of the body and various morning rituals. In this way, the theological understanding is given meaning in human language and culture.

More importantly, Islamic jurists glean that there are nearly universal semantic and behavioral practices that convey knowledge of, and thus signify, that death has occurred. While Muslims may bury their dead, other cultures cremate, yet all cultures across time conduct(ed) rituals that denotes a significant change has occurred such that the individual previously present in the body is no longer present. The point at which these rituals take place is when physical signs of bodily decomposition manifest. From our discussion above, it appears that many Islamic jurists, and a large proportion of the Muslim public, consider circulatory-respiratory cessation to be the point at which death should be declared because the path towards bodily decomposition has been set irreversibly.

What needs clarifying is the biomedical representation of death; a functional notion of death that serves normative purposes in clinical practice. Islam is predominantly a legal and normative tradition and Islamic law is the determining factor that adherents seek authority from for Islamic law represents a large part of Islamic morality [60]. Classical Muslim jurists thus looked at death with a normative lens seeking to address questions such as, “When should the waiting period between a future marriage, *idda*, start for a wife whose husband has died?”; “When should the distribution of inheritance and property of the deceased take place?”; “When should the community obligated funeral prayer occur?”; “When should bodily burial take place?”; and the like. A description of death for Islamic legal purposes is normative in so far as it enables death behaviors which are ordained as communal or individual obligations. In clinical practice, the normative (read: moral) aspects of death relate to questions such as “When ought we discontinue life-sustaining treatments because the clinician’s moral duty to restore health is no longer possible such that both the clinician, if Muslim, and the patient’s surrogate decision-maker, if Muslim, will not be considered to be sinful?”

Another question relates to organ donation: “When is it religiously permissible to authorize the donation of one’s organs without such donation being the proximate cause of the individual’s death?” Withdrawing or withholding life support and/or organ donation serve moral purposes in biomedicine, and what we are asking Islamic jurists to do is to opine on whether and when the death behaviors carried out related to these purposes are religiously permitted. Said another way, not only is the biomedical representation of death about the biological or physiological point at which death can be determined or declared, but also from an Islamic ethico-legal perspective, this representation of death equates to moral end-points at which certain behaviors are permissible.

Given the medicalization of dying, there are multiple purposes for death declaration in hospital and hospice settings. Some of these relate to behaviors to be carried out by families/communities, clinicians, religious/spiritual support staff, and others. From an Islamic bioethical lens, we believe the following approach is most prudent, for it acknowledges a plurality of Islamic juridical views on brain death while demarcating moral boundaries for death behaviors that advance informed

decision-making and are nearly universally acceptable to Islamic scholars and Muslim polities.

With respect to bodily burial and medical autopsy,²⁰ we hold that these actions should only occur after cessation of circulatory-respiratory activity, whether it be physiologically irreversible or judged to be permanent because important decision-makers (the patient or their surrogate decision-makers) agree not to attempt resuscitation after initial cessation, or because state statute prevents attempting resuscitation after initial cessation. Islamic jurists and Muslims uniformly agree the human body is on the path towards decomposition when the activities of circulation and respiration stop and thus death can be declared on the basis of this specific biomedical construction of death. Islamic jurists and theologians uniformly agree that the body cannot carry out the commands of the soul when it has reached the state of decomposition. As such, the metaphysical understanding of death also holds.

Furthermore, because there is a diversity of views on whether the soul's departure from the body has physical indicants, and if such signs exist whether we can ascertain them with certainty, our position adopts caution that we are not burying, or performing an autopsy upon those who may be still living. Additionally, the traditional criteria of circulatory-respiratory collapse are more appropriate to the moral purposes of burial and autopsy, because of the social and cross-cultural acceptability these markers possess. Moreover, they do not require specialist knowledge to ascertain; the common individual would be able to discern that a body is decomposing or that heartbeat and breathing have ceased. We may even reserve the language of 'death' as a customary semantic notion, *urf*, for this standard of cardiopulmonary cessation.

Neurologic criteria for human death, on the other hand, suffice clinical moral purposes such as the obviation of duty to rescue by withdrawal and withholding life sustaining treatment for clinicians and families. Neurologic criteria are morally acceptable because continued life-sustaining measures are ineffective in restoring the health of the patient, and the harms of such sustaining compound. Indeed, clinical research demonstrates that individuals declared brain dead undergo cardiopulmonary cessation shortly thereafter [61], and the intensive treatments of ventilators, feeding tubes, medications and the like carry increasing risk of infection, decubitus ulcers, and otherwise violate bodily integrity and human sanctity [62]. Assuredly, clinical treatment has very little to offer patients in this state; we cannot restore brain function to a conscious state. Islamic jurists, by and large, consider it better to withdraw and/or withhold life-sustaining therapies on the brain-dead patient [16]. Indeed, there is no Islamic obligation to pursue continuing such measures at all.

With respect to organ donation, we advocate for plurality. For some jurists and patients, organ donation is only valid whilst living; hence organ donation after the declaration of death by neurologic death is not aligned. Others hold that organ

²⁰ It bears mention that autopsy requires explicit justification within the Islamic tradition. Tampering with the body after death is generally not permissible. Muslims have expressed their views on autopsy publically and internationally, and there have been claims of violation of the deceased, delays in burial, and nonconsideration of their religious beliefs. For more details see [80].

donation can take place after death, some restricting it to declaration of death after circulatory-respiratory arrest, and others permitting it when neurologic criteria are met [44, 63–65]. Procuring essential organs (i.e., those needed for life, such as the heart and/or both lungs) for transplantation may require the circulatory-respiratory criteria to be met according to some jurists and neurologic criteria to be met for others. Certainly, like their secular counterparts, Islamic jurists are cautious to not run afoul of the dead donor rule.

With respect to the brain-dead state, again there is little clinical treatment can offer because the patient has irretrievably lost the capacity for consciousness, and their essential organs have little or no ‘value’ for them. One could argue if an apparatus that replaces the functions of essential organs, e.g. a ventilator, can be turned off without moral sanction, then essential organs in the body should be made available for transplantation because they too can be ‘turned off.’ However, others may see this view as violating the sanctity of human body alongside its inviolability, *ḥurma and karāma*. Consequently, we suggest that neurologic criteria for death only be applied in cases where individuals have previously authorized organ donation. If these criteria for death and/or organ donation are not aligned with the Muslim patient or surrogate decision-maker’s values, then traditional circulatory-respiratory criteria should be applied.

5 Conclusion

In summary, we believe that death is a moral affair. The purposes of death declaration need to be evaluated from a moral perspective, for the behaviors that are enacted after this declaration are moral in nature. Hence, the purposes of death declaration need to match up with the criteria that this declaration is based upon as well. We believe that determination of death by neurologic criteria, from an Islamic bioethical perspective, can nearly universally permit the withdrawal or withholding of life support, and in some cases/contexts organ donation. However, we do not believe that neurologic criteria for death should be enacted broadly for all legal and moral purposes.

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Jewish Perspectives on Death by Neurologic Criteria

Rabbi David Shabtai

1 Historical Perspective

Debates about determining death are not new to Judaism. In 1837, Rabbi Moshe Sofer (1762–1839), the universally recognized leading Torah scholar of his generation, dealt with a similar concern, albeit from the opposite perspective than the current moment [1]. Responding to what appeared to be an anonymous query,¹ the Pressburg-based Rabbi Sofer addressed the Duke of Mecklenberg-Schweren's recent decree that all corpses must be left unburied for 72 h following the declaration of death. The Duke was responding to a rash of reports of premature declarations of death which led to people being buried while still alive. He argued that determining death was demonstrably still an inexact science. So as to err on the side of preserving life, the Duke ordered the postponement of all burials for 3 days, to be able to ensure the detection of any inappropriately early declarations of death.

As a matter of Jewish law (Halakhah), the issue is far from clear. On the one hand, Jewish law demands a speedy burial. The Torah prohibits leaving a body in wait unless the delay directly enhances the deceased's honor (such as waiting a short while for her children or other dignitaries to arrive) [2, 3]. However, Jewish law also places a premium on life-saving, setting aside virtually all mitzvot (commandments) and prohibitions in efforts to save a life [4]. Rabbi Sofer's questioner reasoned that even while a speedy burial is preferred because the newly built-in delay was intended to save lives, Jewish law should not only allow for this delay but enthusiastically embrace it. Rabbi Sofer thought otherwise.

¹Most of the responsa in the collection identify the questioner, although, in some instances, such as this specific query, Rabbi Sofer intentionally omits the name. Later scholars have identified the questioner as Rabbi Zevi Hirsch Chajes (1805–1855), who recorded his response to Rabbi Sofer's original letter in his work *Darkei Hora'ah* (Responsa Section, number 3).

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