

https://doi.org/10.24035/ijit.25.2024.291			
Received:	10 July 2023	Accepted:	22 January 2024
Revised:	12 December 2023	Published:	15 June 2024
Volume:	25 (June)	Pages:	122-135
To cite:			
Nurfaizatul Aisyah Ab Aziz, Muzaimi Mustapha, & Sabarisah Hashim. 2024. Reflections on neuroethical issues in neuroimaging research advances from the Islamic perspective. <i>International Journal of Islamic Thought</i> . Vol. 25 (June.): 122-135.			

Reflections on Neuroethical Issues in Neuroimaging Research Advances from the Islamic Perspective

NURFAIZATUL AISYAH AB AZIZ*, MUZAIMI MUSTAPHA & SABARISAH HASHIM¹

ABSTRACT

The growth of neuroscientific research from the progress of neurotechnologies imposed an evolving range of potential bioethical issues. In this context, neuroethics offers insightful guides for researchers to deal with such emerging ethical issues in neuroscience research. However, with diverse brain-related research areas worldwide, potential frictions on moral and ethical grounds are likely to surface which inevitably compounded by local traditions and/or belief systems. Potential ethical issues may originate from shared or distinct perspectives depending on the region that can vary from histories, philosophies, moral values, and social stances. Herein, we focused on Islam as the second-largest religious group globally with such diversities. This narrative review aims to highlight the potential neuroethical issues arising from the advances of neuroimaging in neuroscience research from an Islamic perspective through the lens of Islamic legal maxims (al-qawa'id al-fiqhiyyah).

Keywords: Ethical issues, Islamic legal maxims, neuroethics, neuroimaging

Islam is a religion that encompasses all living aspects of human life (i.e., from before birth to the afterlife). Al-Quran, the words of God (Allah), and al-Sunnah, which contains all the actions, sayings (*hadiths*), and wisdom of the Prophet Muhammad, are the two primary sources of the Islamic law that must be followed by Muslims' life (Hashi 2011). Aside from these primary and supreme sources of Islamic law, *ijma'* (Muslim scholars' consensus) and *qiyas* (analogical reasoning) are the secondary sources that can be accepted to guide Islamic law (A. C. Miller, Ziad-Miller & Elamin 2014). In essence, the two sources ensure that the debate on specific rulings can reach a consensus that meets the need of the ever-changing modern world with the assurance of conforming to the two primary sources of Islam (i.e. Al-Quran and al-Sunnah).

¹**Nurfaizatul Aisyah Ab Aziz***, (Corresponding Author) Ph. D. candidate at the Dept. of Neurosciences, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, MALAYSIA. Email: faizaisyah@student.usm.my [ORCID iD: 0000-0002-9782-0456].

-Muzaimi Mustapha. Assoc. Professor at the Dept. of Neurosciences, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, MALAYSIA. Email: mmuzaimi@usm.my [ORCID iD: 0000-0002-8404-0506].

-Sabarisah Hashim, Senior Lecturer at the Dept. of Neurosciences, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan, MALAYSIA. Email: risha@usm.my [ORCID iD: 0000-0001-6054-5246].

One of the comprehensive methods used to discuss new rulings is via *al-qawa'id al-fiqhiyyah al-'aliyyah* (Islamic legal maxims) are derived from the thorough study of Islamic jurisprudence (*usul al-fiqh*) by leading Muslim jurists on various topics. These Islamic legal maxims consist of general *fiqh* guidelines that can be applied to pertinent issues where applicable within common rulings (Saiti & Abdullah 2016). Kamali (2008) highlighted that the words used or contained in Islamic legal maxims are taken from Islam's two supreme primary sources, which Muslim jurists have often refined over the centuries. Thus, the Islamic legal maxims also represent the peak product of the cumulative progress to address multiple problems in specific periods that could not have happened during the formative phase of *fiqh* development.

Islamic legal maxims are closely linked to the objectives and purposes of Islamic law, known as *maqasid al-shariah*. The most crucial objective of *maqasid al-shariah* is to conserve human benefits by the protection of human faith (*hifz al-din*), life (*hifz al-nafs*), progeny/lineage (*hifz al-nasl*), intellect (*hifz al-'aql*), and wealth (*hifz al-mal*) (Mustafa 2014). Therefore, Islamic legal maxims could provide discernible insight into Islamic law (Kamali 2008). The knowledge on *maqasid al-shariah* also has been advocated as a complementary framework to conventional bioethics in resolving the various bioethical issue (Ibrahim, Rahman, Saifuddeen, & Baharuddin, 2019; Saifuddeen, Rahman, Isa & Baharuddin 2014).

There are five major Islamic legal maxims grouped under the term *al-qawa'id al-fiqhiyyah al-'aliyyah*: (i) principle of *qasd* (intention), (ii) principle of *yaqin* (certainty), (iii) principle of *darar* (injury), (iv) principle of *darurah* (necessity) and (v) principle of '*urf* (custom). These principles are deemed to be the most encompassing maxims that can be applied to the whole *fiqh* spectrum (Kamali 2008). Owing to this comprehensiveness, these five Islamic legal maxims can be tailored to address contemporary life issues in a variety of fields, such as medical ethics (Mustafa 2014), finance (Saiti & Abdullah 2016) and environment (Awang & Abidin 2011) without losing their essence.

The recent growth in neuroscientific research and the advancement of neurotechnologies have led to an expanding ground for numerous ethical challenges. There are a few neurotechnologies that have been used in neuroimaging research such as electroencephalography (EEG), magnetoencephalography (MEG), functional magnetic resonance imaging (fMRI), computed tomography (CT), positron emission tomography (PET) and single-photon emission computerized tomography (SPECT) that have different procedures and functionality.

Neuroethics has been coined to tackle the various ethical, legal, and social implications as the repercussions of neuroscience research expansion (Farah 2012; Safire 2002). Neuroethics overlaps with some pertinent issues in biomedical ethics (Roskies 2002), which revolve around the four main biomedical ethics principles: autonomy, non-maleficence, beneficence, and justice (Beauchamp & Childress 2001). This is not surprising as neuroethics can be regarded as a section under biomedical ethics that caters to neuroscience research that is acknowledged to impose more complex questions that may stretch well beyond the scope of the four principles. Notwithstanding, the four principles serve as the starting ground for neuroethics deliberation, which was previously the framework for ethical debate involving the progress in genetics and genomics (Mezinska et al. 2021) and are not covered in this review.

Corroboratively, these bioethical issues are frequently encountered in global neuroscience research. Though prominent in Europe and the United States, other nations such as China, Japan, India, Africa, the Middle Eastern, and Southeast Asian countries are also conducting a diverse range of neuroscience research. Furthermore, numerous ethical issues may result from such diversities due to the differences in the respective countries or regions' histories, philosophies, moral values, and stances. While some issues may not be directly relevant to the science we currently know, they still fall within the ethical framework in research. With Islam having an estimated 1.8 billion believers worldwide and the fastest-growing religion globally (Lipka & Hackett 2017), such diverse cultural and religious frictions pertaining to ethical questions will emerge and warrant appropriate attention.