

Exploring the Ethical Framework of Science: A Critical Study from the Islamic Perspective

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Abstract:

This paper critically explores the ethical framework of science through the lens of Islamic thought, offering an in-depth analysis of how scientific inquiry is guided by moral and spiritual principles in Islam. While contemporary scientific ethics often rely on secular models grounded in humanism, Islam presents a divinely anchored system where knowledge (*ilm*) is pursued not merely for empirical advancement but as a sacred duty, deeply interwoven with ethical accountability. The study highlights foundational Islamic concepts such as *tawhīd* (Divine Unity), *niyyah* (intention), *amanah* (trust) and *maṣlahah* (public good) as critical components of a morally responsible scientific framework. Drawing on primary Islamic sources, the Qur'ān and Sunnah, as well as the works of classical scholars like Al-Ghazālī, Ibn Rushd and modern thinkers such as Dr. Mahmood Ahmad Ghazi, the paper argues that science in Islam must serve higher moral purposes and societal welfare. The integration of *maqāṣid al-sharī'ah* (higher objectives of Islamic law) provides a dynamic and contextually adaptable ethical model for contemporary scientific challenges, including bioethics, environmental concerns and technological disruption. By comparing Islamic and secular paradigms of scientific ethics, the study reveals Islam's holistic vision of knowledge where reason and revelation work in harmony. The article concludes that reviving this ethical tradition is essential for aligning modern science with human dignity, social justice and spiritual awareness. This research serves as a step toward developing a comprehensive, faith-based ethical framework that addresses both classical guidance and modern realities in the scientific circles.

Keywords: *scientific ethics, maqāṣid al-sharī'ah, vision of knowledge, classical guidance*

1. Introduction

The relationship between science and ethics has been a subject of profound inquiry, especially in a world marked by rapid technological advancement, environmental crises and ethical dilemmas in fields such as artificial intelligence, genetic engineering and biomedical research. In many modern academic and scientific circles, ethical discourse is largely shaped by secular philosophies; utilitarianism, deontology, pragmatism and humanism, often detaching moral values from metaphysical or religious foundations.

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However, in the Islamic tradition, science and ethics are indispensable with the acquisition of knowledge (*‘ilm*) viewed as a spiritual and moral act, not merely a utilitarian enterprise.

Islam, as a comprehensive worldview (*al-niẓām al-shāmil*), offers a distinct ethical framework for scientific inquiry rooted in divine revelation (*waḥy*), prophetic teachings (*Sunnah*) and a rich intellectual legacy developed over centuries by Muslim scholars. The Qur’ān frequently invites believers to reflect on the natural world, describing it as a manifestation of God's signs (*āyāt*), thus promoting empirical observation grounded in spiritual contemplation. However, this reflection is always embedded in a moral context that prioritizes responsibility, justice and the welfare of creation.

This article seeks to explore the ethical framework of science from the Islamic perspective through a critical study of core values, classical scholarship and contemporary needs. It examines how principles such as *tawḥīd* (Divine Unity), *niyyah* (right intention), *amanah* (moral responsibility), *maṣlahah* (public welfare) and *maqāṣid al-sharī‘ah* (higher objectives of Islamic law) shape the purpose, methodology and application of scientific knowledge. By contrasting Islamic ethics with secular scientific paradigms, this study emphasizes the need to revive an integrated model of science in the Muslim world, one that harmonizes reason with revelation and empirical inquiry with ethical integrity. Such a model is not only rooted in Islamic tradition but is urgently needed in an era of moral ambiguity and unchecked technological power.

2. Science and Ethics: Conceptual Overview

Science is commonly defined as a systematic enterprise that builds and organizes knowledge through testable explanations and predictions about the universe. Ethics, on the other hand, concerns questions of morality; what is right and wrong, just and unjust.

2.1 Defining Science and Its Moral Neutrality in Modern Discourse:

Science, in its contemporary formulation, is widely defined as the systematic pursuit of knowledge concerning the natural world, relying on empirical observation, experimentation and rational inquiry. In post-Enlightenment discourse, this process has largely been framed within the paradigm of value-neutrality, asserting that science is primarily descriptive, explaining what is without engaging in prescriptive judgments about what *ought* to be. This view has been championed by logical positivists like Karl Popper, emphasized verifiability and falsifiability as the sole arbiters of scientific legitimacy.²

². Popper, Karl. *The Logic of Scientific Discovery*. London: Hutchinson, 1959, p.31

However, this notion of epistemological neutrality has been increasingly critiqued. Scholars such as Sandra Harding and Bruno Latour argue that science is never value-free, as it is embedded within cultural, political and ethical contexts.³ The deployment of scientific knowledge in morally contentious areas, such as the creation of nuclear weapons, surveillance technologies and human genetic modification, has exposed the ethical vacuum in positivist scientific traditions. As H. Tristram Engelhardt notes, modern science, when detached from metaphysical and moral anchoring, becomes susceptible to utilitarian abuses.⁴

From the Islamic epistemological standpoint, knowledge (*'ilm*) is inherently tied to ethical responsibility and divine accountability. The Qur'ān repeatedly emphasizes that knowledge must lead to wisdom (*ḥikmah*) and righteous action.⁵ The Prophet Muhammad ﷺ said,

“Whoever is granted knowledge but does not act upon it, his knowledge will be a proof against him on the Day of Judgment.”⁶

This reflects a foundational Islamic principle: knowledge devoid of moral guidance is not only incomplete but potentially corrupting.

Therefore, Islam challenges the Western bifurcation between facts and values by emphasizing that all human actions, including scientific pursuits, are subject to ethical evaluation. As Naquib al-Attas aptly puts it:

"Secular science is not merely science devoid of religion, but science devoid of *adab* (ethical discipline)."⁷

2.2 The Islamic Integration of Science and Ethics:

In contrast to the secular model, Islam does not recognize the bifurcation between knowledge and ethics. The Qur'ān not only invites human beings to observe and explore the cosmos,⁸ but also links this exploration to moral and spiritual reflection. Knowledge (*'ilm*) in Islam is a sacred trust (*amanah*) and a means to draw nearer to the Creator.

³. Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press, 2004, p.46

⁴. Engelhardt, H. Tristram. *The Foundations of Bioethics*. New York: Oxford University Press, 1996, p.30

⁵. Al-Baqarah, 2:269

⁶. Tirmidhī, Muhammad bin Essa bin Surah, al-Jāme, Riyadh: Dār-us-Salām, Hadith # 268

⁷. Al-Attas, Syed Muhammad Naquib. *The Concept of Education in Islam: A Framework for an Islamic Philosophy of Education*. Kuala Lumpur: ISTAC, 1980, p.14

⁸. Al-Ghāshiyah, 88:17–20

Every scientific endeavor, therefore, must be rooted in ethical intention (*niyyah*), guided by divine principles and directed toward the common good (*maṣlahah*).

Seyyed Hossein Nasr, one of the foremost scholars of Islamic science, critiques the secular model of science for its de-sacralization of nature and its abandonment of ethical constraints. He writes:

*“Modern science sees the universe as a machine devoid of meaning, whereas Islamic science views it as a web of divine signs pointing toward the Creator.”*⁹

This view emphasizes that the purpose of science in Islam is not merely to dominate or manipulate nature, but to understand it in a manner that nurtures humility, responsibility and gratitude.

2.3 Why the Conceptual Shift Matters:

This distinction between secular and Islamic views of science is not merely theoretical, it has profound implications for the ethical challenges of our time. In the absence of a clear moral compass, science may serve corporate, political or military interests at the expense of humanity and the environment. The Islamic framework, by contrast, demands that both the process and outcome of scientific inquiry align with ethical values such as justice (*‘adl*), compassion (*rahmah*) and stewardship (*khilāfah*).

Moreover, in Islamic tradition, knowledge itself is not morally neutral. The Qur’ān speaks of two kinds of knowledge: that which brings one closer to God and benefits humanity and that which leads to arrogance and corruption. The verse, *“They know the outward of this world’s life, but of the Hereafter they are heedless.”*¹⁰ is often interpreted by scholars like Al-Ghazālī as a warning against worldly knowledge pursued without spiritual awareness. Al-Ghazālī further states:

*“Knowledge without action is madness, and action without knowledge is vanity.”*¹¹

This integration of knowledge, ethics and action forms the backbone of Islamic scientific thought and offers a vital alternative to the fragmented and morally ambiguous landscape of modern science.

3. Foundational Islamic Ethical Principles in Science

Modern scientific progress, despite its remarkable achievements, has raised serious

⁹. Syed Hossein Nasr, *Science and Civilization in Islam*, Cambridge: Harvard University Press, 1968, p.67

¹⁰. Al-Room, 30:7

¹¹. Abū Hāmid al-Ghazālī, *Ihyā’ ‘Ulūm al-Dīn*, Cairo: Al-Maktabah al-Tijāriyyah, 45/1

ethical concerns in areas such as genetic modification, artificial intelligence and environmental degradation. The absence of a comprehensive moral framework often leaves science vulnerable to misuse. While secular systems of ethics attempt to fill this gap through utilitarianism, relativism, or contractual ethics, Islamic thought offers a divinely grounded and holistic ethical framework that precedes such crises, shaping both the intent and practice of knowledge production.¹²

3.1 Tawḥīd (Divine Unity):

Tawḥīd, the foundational Islamic belief in the oneness of God, provides the metaphysical grounding for all knowledge. The Qur'ān affirms that:

*"To Allah belongs whatever is in the heavens and whatever is on the earth."*¹³

Hence, scientific knowledge is not autonomous or secular, it is seen as a means to understand the signs (*āyāt*) of God and to foster humility, rather than dominance.

Seyyed Hossein Nasr emphasizes that science in Islam is not a tool of conquest but a reflection of divine order, stating that:

*"Islamic science views nature not as a machine but as a sacred reality filled with divine signs."*¹⁴

The principle of *tawḥīd* rejects the epistemic arrogance associated with scientism and reinforces that scientific inquiry is bound by submission to the Creator's will.

3.2 Niyyah (Right Intention):

Intent (*niyyah*) is a key determinant of moral worth in Islam. The Prophet Muhammad ﷺ said,

*"Actions are judged by intentions."*¹⁵

This applies directly to scientific research, where the goal must be ethically aligned, such as seeking public benefit, alleviating suffering or preserving the environment. Ibn al-Qayyim emphasized that even acts of deep knowledge can become spiritually meaningless or harmful if not rooted in correct intention.¹⁶

Niyyah provides an internal filter that aligns research motivations with divine accountability, discouraging unethical pursuits even when the outcome appears beneficial.

¹². Nasr, *Science and Civilization in Islam*, p.67

¹³. Al-Baqarah, 2:255

¹⁴. Nasr, *Science and Civilization in Islam*, p.70

¹⁵. Bukhārī, Muḥammad ibn Ismā'īl. *Ṣaḥīḥ al-Bukhārī*. Cairo: Dār ibn Kathīr, Hadīth # 1

¹⁶. Ibn al-Qayyim, Muḥammad. *Madārij al-Sālikīn*. Beirut: Dār al-Kutub al-'Ilmiyyah, 1997, 140/1

3.3 Amanah (Knowledge as a Trust):

Islamic ethics regard knowledge as a sacred trust (*amanah*). The Qur'ān warns:

“Do not mix truth with falsehood or conceal the truth while you know [it]”¹⁷

This underscores the moral responsibility scientists bear in handling data, disclosing risks and avoiding deception or manipulation. Al-Ghazālī argued that scholars who misuse knowledge for fame or manipulation are more dangerous than ignorant people.¹⁸ *Amanah* binds scientific work to values of integrity, transparency and public responsibility—moving ethics from external enforcement to internal conscience.

3.4 Maṣlaḥah (Public Good and Welfare):

The principle of *maṣlaḥah* or public benefit has long guided Islamic legal and ethical rulings. Scientific endeavors are considered virtuous when they serve human welfare, protect life, or enhance justice. Imam al-Shāṭibī defined *maṣlaḥah* as any action that secures benefit or prevents harm in accordance with Sharī'ah.¹⁹

In areas such as biotechnology or climate science, *maṣlaḥah* requires that ethical review include both short-term and long-term impact assessments, especially on vulnerable communities and ecological balance. Unlike profit-centered models, *maṣlaḥah* ensures that science remains socially conscious, inclusive and guided by collective well-being.

3.5 Maqāṣid al-Sharī'ah (Higher Objectives of Islamic Law):

Maqāṣid al-Sharī'ah, the higher objectives of Islamic law, provide a structured framework for evaluating the moral legitimacy of scientific practices. These objectives include the protection of:

- Religion (*dīn*)
- Life (*nafs*)
- Intellect (*'aql*)
- Lineage (*nasl*)
- Property (*māl*)
- Environment (*bi'ah*) as recognized by contemporary scholars

For example, advancements in neurotechnology must align with *ḥifẓ al-'aql* (preservation of intellect), while medical research must uphold *ḥifẓ al-nafs* (preservation of life).²⁰

¹⁷. Al-Baqarah, 2:42

¹⁸. al-Ghazālī, *Ihyā' 'Ulūm al-Dīn*, 38/1

¹⁹. Al-Shāṭibī, Abū Ishāq. *Al-Muwāfaqāt fī Uṣūl al-Sharī'ah*. Beirut: Dār al-Ma'rifah, 2005, 33/2

²⁰. Auda, Jasser. *Maqāṣid al-Sharī'ah: A Beginner's Guide*. London: International Institute of Islamic Thought, 2008, p.19

Maqāṣid offers a scalable, principle-based ethic that can engage with modern challenges like AI, data ethics and bioengineering, without compromising religious integrity.

The integration of *tawhīd*, *niyyah*, *amanah*, *maṣlaḥah* and *maqāṣid* represents a comprehensive Islamic framework that informs not just the goals of science but its methods, scope and societal implications. These principles move ethics from being an afterthought to being **the foundation** of scientific inquiry. In the words of Dr. Mahmood Ahmad Ghazi:

*“The Islamic worldview never encouraged knowledge without values; it promoted a civilization where every discipline was morally accountable to God.”*²¹

In an era where technological progress often outruns ethical reflection, the Islamic model offers a powerful recalibration urging scholars, institutions and policymakers to reclaim science as a moral enterprise, one that serves both humanity and the Creator.

4. Classical Scholars on Scientific Ethics

The Islamic tradition has produced an extensive intellectual legacy wherein **science** and ethics are deeply intertwined. Classical Muslim scholars viewed the pursuit of knowledge (*‘ilm*) not as a secular or value-neutral enterprise but as a moral and spiritual obligation. Their writings emphasized that science must serve higher purposes; ethical, social and theological. By analyzing their perspectives, we gain insights into a model of science that integrates epistemology, metaphysics and morality in a holistic way. This section explores the views of selected classical scholars who established the ethical contours of scientific inquiry in Islam.

4.1 Al-Ghazālī (d. 1111 CE): Knowledge as a Moral Trust:

Imām Abū Ḥāmid al-Ghazālī, placed significant emphasis on the ethical orientation of all branches of knowledge. **He** distinguished between beneficial knowledge (*‘ilm nāfi‘*) and that which is worldly and potentially harmful. For al-Ghazālī, the value of knowledge was inseparable from the *niyyah* (intention) and its contribution to the soul's purification and society's welfare. He warned of scholars whose knowledge lacks ethical grounding, stating:

*“Knowledge without action is insanity and action without knowledge is vanity.”*²²

²¹. Ghazi, Mahmood Ahmad. *Islam and Modern Science*. Islamabad: Islamic Research Institute, 2008, p.44

²². Al-Ghazālī, *Iḥyā’ ‘Ulūm al-Dīn*. 45/1

Al-Ghazālī argued that the responsibility of the learned is to ensure their scientific pursuits are aligned with divine guidance, avoiding arrogance and the misuse of knowledge. His model affirms that scientific knowledge is not merely cognitive but also ethical and spiritual.

4.2 Ibn Sīnā (Avicenna) (d. 1037 CE): Harmony of Reason and Ethics:

Ibn Sīnā, one of the most influential polymaths of the Islamic Golden Age, contributed to various sciences, from medicine and physics to logic and metaphysics. Despite his Aristotelian influences, his approach was deeply ethical. In his *Kitāb al-Shifā'*, he contended that the pursuit of natural philosophy (*'ilm al-ṭabī'īyyāt*) must be subordinated to the higher goal of human perfection (*kamāl*), which includes ethical virtue and closeness to God.²³

Ibn Sīnā's ethical framework was evident in his medical ethics as well, where he stressed the importance of compassion, humility and trust between the physician and patient. His integration of science with *akhlaq* (ethics) serves as a precursor to what modern bioethics now attempts to codify.

4.3 Fakhr-ud-Dīn Al-Rāzī (d. 1210 CE): Cosmology and Moral Reflection:

Fakhr-ud-Dīn Al-Rāzī, a theologian and philosopher, viewed scientific inquiry particularly into the cosmos, as a means to reinforce moral awareness and awe for the Creator. In his *Tafsīr al-Kabīr*, he frequently discussed astronomical phenomena not merely for their physical description, but for their theological and ethical implications. Al-Rāzī considered the observation of celestial bodies as a form of spiritual exercise, strengthening *taqwā* (God-consciousness) and intellectual humility.²⁴

He argued that scientific discovery is only beneficial if it enhances human humility and reverence for divine order. Otherwise, it risks leading to arrogance and alienation from spiritual truth.

The insights of these classical scholars underline a central Islamic principle: that science cannot be ethically agnostic. Their emphasis on *niyyah*, humility and societal benefit presents a stark contrast to the contemporary trend of reducing science to technological utility or commercial value. By studying these thinkers, we rediscover a model in which scientific inquiry is a moral vocation, not merely a profession.

Moreover, their views support the argument that Islamic science was not religiously restrictive as often alleged but rather ethically expansive. It did not shun scientific

²³. Ibn Sīnā. *Kitāb al-Shifā'*. Cairo: Dār al-Ma'ārif, 1952, 22–26/4

²⁴. Al-Rāzī, Fakhr al-Dīn. *Tafsīr al-Kabīr*. Beirut: Dār Iḥyā' al-Turāth al-'Arabī, 2001, 130/2

advancement but demanded that such advancement be accompanied by ethical refinement and spiritual purpose.

5. Comparative Perspective: Islamic Science vs. Secular Ethics

In the contemporary discourse on ethics in science, the secular paradigm often dominates policy and research frameworks. However, this dominance should not obscure the rich, comprehensive and theologically grounded ethical systems of religious traditions, particularly Islam. This section aims to compare the Islamic ethical framework of science with the secular (often humanist-utilitarian) model, analyzing their foundational differences in metaphysics, purpose, responsibility and outcomes.

5.1 The Ontological Divide: Creator vs. Mechanism:

The Islamic worldview begins with the Tawhīdic paradigm; the belief in the Oneness of God who is the source of all knowledge. Science, in this view, is a means to discover the āyāt (signs) of Allah in the universe.²⁵ Scientific inquiry is sacred and must be pursued with humility and ethical accountability, recognizing the moral fabric of creation.

By contrast, secular science, especially post-Enlightenment, adopts a mechanistic and materialist worldview, where nature is often reduced to an inert system governed by impersonal laws. This disenchanting view of the cosmos distances science from any metaphysical responsibility. As Carl Sagan once remarked: “The cosmos is all that is or ever was or ever will be,” a statement emblematic of the materialist narrative that dominates modern scientific philosophy.²⁶

5.2 Purpose of Science: Worship vs. Control:

In Islam, science is not pursued for the sake of curiosity alone, but to fulfill the divine mandate of stewardship (*khilāfah*), cultivate gratitude and promote justice.²⁷ The Prophet Muhammad ﷺ emphasized the ethical purpose of knowledge by stating:

*“Whoever follows a path in the pursuit of knowledge, Allah will make a path to Paradise easy for him.”*²⁸

Secular science, particularly under utilitarian ethics, often views progress through the lens of technological control and efficiency. Whether it is the conquest of disease, nature or even death (as seen in transhumanist agendas), science becomes a tool of power. Ethical frameworks in this context, such as consequentialism or deontology, lack a transcendent anchor and are vulnerable to shifting sociopolitical agendas.

²⁵. Hā Meem Sajdah, 41:53

²⁶. Carl Sagan, *Cosmos*, New York: Random House, 1980, p.4

²⁷. Al An'ām, 6:141

²⁸. Muslim bin Hujjāj, *Al Jāme Al Sahīh*, Riyadh: Dārussalām, Hadith: 2699

5.3 Responsibility and Boundaries:

Islamic science emphasizes accountability before God, even in unseen or future consequences. The principle of *taqwā* (God-consciousness) governs both intention and method. Actions are judged not just by their outcomes, but by alignment with divine law (Sharī'ah). For instance, even a scientifically successful experiment that causes harm to innocent life would be deemed impermissible, regardless of utility.

On the other hand, secular ethics often resorts to utilitarian calculus: if the benefits outweigh the costs, the action is justifiable. This flexibility can open the door to ethically contentious practices such as human cloning, euthanasia or environmental exploitation, so long as they are deemed necessary or beneficial in the short term. Hans Jonas criticized this shortsightedness, advocating instead for an “ethic of responsibility” that would incorporate long-term existential risks.²⁹

5.4 Epistemological Humility vs. Certitude:

Islamic science encourages humility and the acknowledgment of human limitations:

*“And of knowledge, you have been given only a little”.*³⁰

Scientists are not all-knowing; they are seekers who must acknowledge their moral and epistemic fallibility.

In contrast, the secular model often tends toward epistemological arrogance, wherein science is viewed as the ultimate arbiter of truth and moral judgment; a position known as scientism. This confidence can obscure the need for external moral guidance and lead to technocratic governance, where decisions are made solely on scientific data, with minimal regard for moral nuance.

The divergence between Islamic and secular ethical paradigms in science is not marginal but foundational. Islamic science is embedded in a cosmic ethical order, where values are not constructed but revealed. In contrast, secular ethics are often adaptive and constructed from consensus or utility, prone to change and cultural relativism.

By revisiting and revitalizing the Islamic ethical framework, contemporary Muslim scholars, scientists, and policymakers can construct a moral science; one that resists the reduction of values to profit, power, or convenience. In a world grappling with ecological crisis, technological dehumanization and ethical ambiguity, the Islamic model offers a spiritually grounded, morally coherent alternative that merits renewed attention.

²⁹. Hans Jonas, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*, Chicago: University of Chicago Press, 1984, p.7–10

³⁰. Al Isrā 17:85

6. Challenges and Contemporary Relevance

In an age where technological advancement is rapidly redefining human existence, the absence of a coherent ethical compass has made scientific progress vulnerable to abuse. From environmental degradation to the ethical dilemmas posed by artificial intelligence and biotechnology, modern science often prioritizes innovation over moral responsibility. This section explores how the Islamic ethical framework can critically engage with these contemporary challenges, offering timeless principles for navigating modern complexities.

6.1 Ethical Dilemmas in Modern Science:

One of the foremost challenges of modern science lies in its **utilitarian approach**, often driven by capitalist, militaristic or politically expedient motives. For instance, the pharmaceutical industry frequently faces criticism for prioritizing profits over equitable access to medicine.³¹ Similarly, the development of artificial intelligence and autonomous weapon systems raises significant concerns about accountability, moral agency, and control.³²

From the Islamic perspective, such developments raise red flags because they detach scientific agency from divine accountability. In Islam, the pursuit of knowledge must be linked with the intention (*niyyah*) to serve humanity, and must be in accordance with the higher objectives of Shari'ah (*maqāsid al-shari'ah*), which include the protection of life, intellect, lineage, wealth, and religion.³³ Any scientific endeavor that compromises these values becomes ethically untenable.

6.2 Climate Change and Environmental Ethics:

One of the most pressing ethical issues of our time is climate change, a phenomenon largely driven by unchecked industrial growth and consumption patterns. Modern science has diagnosed the crisis but has not offered a moral framework to address the human behaviors causing it. Islam, however, places great emphasis on environmental stewardship (*khilāfah*) and moderation (*i'tidāl*). The Qur'ān states:

“Do not cause corruption upon the earth after its reformation.”³⁴

This injunction, as interpreted by scholars like Fazlun Khalid, forms the basis of Islamic environmental ethics, emphasizing that humans are trustees of the earth, not its masters.³⁵

³¹. Kass, Leon. “Science, Ethics, and the Human Future.” *The New Atlantis* 1 (2001), p.9–28

³². Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press, 2014, p.11

³³. Kamali, Mohammad Hashim. *Shari'ah Law: An Introduction*. Oxford: Oneworld Publications, 2008, p.59

³⁴. Al A'rāf 7:56

The overexploitation of natural resources for profit violates the Islamic principle of balance (*mīzān*) and disrupts the harmony intended by the Creator.³⁶

6.3 Bioethics and Genetic Engineering:

The fields of genetic modification, cloning and stem cell research present ethical quandaries that require a comprehensive moral framework. While modern science often frames these issues in terms of utility and consent, Islamic ethics brings in additional dimensions; such as the sanctity of human dignity (*karāmah*), the prohibition of altering Allah's creation for vanity,³⁷ and the principle of harm avoidance (*lā ḍarar wa lā ḍirār*). According to Islamic bioethical scholars like Abdulaziz Sachedina, interventions in the human genome are permissible only if they are aimed at curing diseases, preserving life and do not involve harmful consequences or playing God.³⁸ Thus, the Islamic framework does not reject scientific advancement but conditions it within ethical constraints rooted in divine guidance.

The challenges faced by contemporary science underscore the urgency of embedding a transcendent moral framework in scientific discourse. Ethical vision of Islam, rooted in divine accountability, communal welfare and ecological balance, provides a rich, alternative paradigm to the materialist orientation of modern science. This is particularly relevant in global conversations around AI regulation, sustainability and healthcare equity.

As Muslims contribute to global science, they must not only excel technically but also revive the prophetic model of ethical inquiry; one that harmonizes reason with revelation and progress with piety. Such a synthesis can make science not merely a tool for dominance but a means of fulfilling our role as vicegerents of God on Earth.

7. Conclusion

The ethical framework of science, when critically examined through the lens of Islam, emerges not as a restrictive force but as a guiding compass rooted in divine wisdom and moral accountability. Unlike secular ethical paradigms, which often shift with societal trends or utilitarian considerations, the Islamic worldview grounds scientific inquiry in

³⁵. Fazlun Khalid. *Signs on the Earth: Islam, Modernity and the Climate Crisis*. Oxford: Islamic Foundation, 2010, p.11

³⁶. Ar Rahmān, 55:7–9

³⁷. An Nisā, 4:119

³⁸. Sachedina, Abdulaziz. *Islamic Biomedical Ethics: Principles and Application*. Oxford: Oxford University Press, 2009, p.16

immutable values derived from the Qur'ān, Sunnah and the higher objectives of Sharī'ah (*maqāṣid al-sharī'ah*). This integration ensures that scientific endeavors are not only technologically progressive but also spiritually and socially responsible.

Throughout this study, it has been demonstrated that Islam does not oppose scientific development, in fact the Islamic tradition is replete with calls to explore the natural world.³⁹ However, Islam emphasizes that the intention (*niyyah*) and ethical alignment of scientific pursuits are essential. Knowledge is a trust (*amānah*) and its misuse can lead to harm not only for individuals but for societies and the environment at large.⁴⁰

Contemporary scientific challenges, ranging from artificial intelligence and genetic engineering to environmental degradation, highlight the dangers of an ethically unanchored science. The Islamic ethical model, with its emphasis on justice (*'adl*), balance (*mīzān*), compassion (*rahmah*) and accountability before God (*taqwā*), offers a holistic alternative. By re-centering ethics in scientific research and innovation, Islamic principles can enrich global discourses and foster a science that serves humanity while honoring the Creator's design.

In conclusion, revitalizing the Islamic ethical tradition in the realm of science is not merely a religious imperative, it is a global necessity. As Muslims participate in and contribute to scientific advancement, there is a compelling need to reassert a moral vision rooted in revelation, reason and responsibility. Only through such a synthesis can science become not just a means of power, but a path to human flourishing and divine proximity.

8. Recommendations:

At the end of this critical study, it is necessary to present recommendations and the work to do, which are following:

a. Integration of Islamic Ethics in Scientific Curricula:

Academic institutions, especially in the Muslim world, should embed Islamic ethical principles into the curricula of science and technology programs. This includes offering interdisciplinary courses that explore the relationship between ethics, revelation and scientific practice, rooted in *maqāṣid al-sharī'ah* and the Qur'ānic worldview.

b. Establishment of Ethics Review Boards with Islamic Frameworks:

Research institutions should establish bioethics and scientific review boards that incorporate Islamic jurisprudential perspectives alongside universal ethical standards.

³⁹. Āl e Imrān, 3:190–191

⁴⁰. Kamali, *Shari'ah Law: An Introduction*, p.61

These bodies can ensure that research involving human life, genetic modification, AI and environmental impact aligns with both scientific rigor and Islamic moral teachings.

c. Revival of Ijtihād in Scientific and Technological Ethics:

Muslim scholars must be encouraged to engage in dynamic *ijtihād* (independent reasoning) to address emerging ethical dilemmas in science and technology. Collaborative platforms should be created where scientists and Islamic jurists can jointly deliberate on contemporary issues like cloning, nanotechnology, data privacy and transhumanism.

d. Public Awareness and Ethical Literacy Campaigns:

Islamic centers, mosques, and media outlets should promote ethical literacy in science through lectures, documentaries and public dialogues. By raising awareness among the general public, Muslim societies can foster a culture that values moral accountability in scientific progress.

e. Research and Publication on Islamic Science Ethics:

Scholars and postgraduate students should be encouraged to conduct research specifically on Islamic perspectives in modern scientific fields, producing peer-reviewed content in both English and Arabic/Urdu. Journals and publishing houses should allocate space for ethical debates rooted in the Islamic worldview.

f. International Collaboration between Muslim Scientists and Scholars:

Cross-border academic networks should be created to promote collaboration between Muslim scientists and Islamic ethicists. Conferences, joint research grants and policy papers can be developed to frame a global Muslim response to ethical challenges in science.

g. Institutional Fatwas and Policy Guidelines:

Recognized Islamic institutions like Al-Azhar, IIIT, and Islamic Fiqh Academies should issue detailed *fatwās* and ethical guidelines on scientific practices, especially in contentious fields like stem cell research, AI warfare, and climate intervention, ensuring global reach and credibility.