



The Initiative on Islam
and Medicine



EXPLORING BIOSCIENCE & ISLAM

A Seminar Series on
Fundamental Questions about
the Human Being:

Student Reflection Booklet





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Program Overview

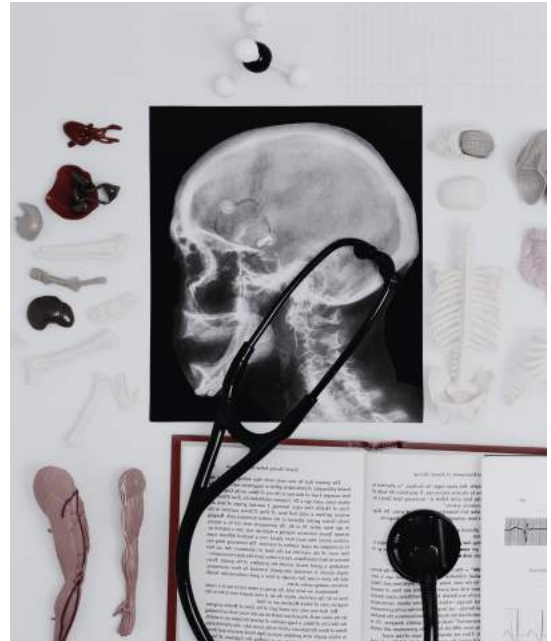


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Given the dominant narrative that religious and scientific perspectives often conflict, Muslims embarking on careers in the biomedical sciences may wonder whether affirming certain scientific facts compromises their religious beliefs. Or, alternatively, whether religion can help explain scientific findings, and whether the two fields should be kept separate in their professional lives.

To help Muslim high school and college students navigate the complex intersection between Islam and Bioscience, we brought together theologians, scientists and pedagogical experts to design and implement a novel seminar series addressing key questions about the human being from religious and scientific perspectives.

This 20-hour curriculum was trialed with Muslim high schoolers in the United States, and with foundational studies students at the International Islamic University Malaysia (IIUM).



THE SEVEN SEMINARS

1. **What Do We Know and How Do We Know It? Reasoning Exercises in Islam and Science.**
2. **How did Human Beings Come About? Evolution and God's Special Creation.**
3. **What does it mean to be a Human Being? Neuroscience, Artificial Intelligence and the Soul.**
4. **Human Enhancement and Transhumanism: Are we changing and should we change our being?**
5. **Are We Programmed or Do We Have Free Will? Discussions on Fate and Genetic Determinism**
6. **Are Human Beings Unique in this Universe? Science and Theological Inquiry about Extraterrestrial Intelligent Life**
7. **Curriculum Review: Knowledge Café's and Harvest**

After the seminars, the students reflected on their experiences by penning essays and designing infographics. This booklet contains a selection of their work highlighting the newfound insights and the indelible mark the seminars left upon the learners. We invite you to read, enjoy and learn from these creative pieces and reach out to our team if you wish to learn more about this project.



BIOGRAPHIES

Project Lead



Dr. Aasim I. Padela
MD, MSc

Dr. Padela is Professor of Emergency Medicine, Bioethics and the Medical Humanities at the Medical College of Wisconsin, and director of a non-profit organization, the Initiative on Islam and Medicine. He holds an MD from Weill Cornell Medical College and a MSc in Healthcare Research from the University of Michigan. He completed emergency medicine training at the University of Rochester and a clinical ethics fellowship at the University of Chicago. Overall, Dr. Padela's scholarship aims at improving health and healthcare through better accommodating religious values in healthcare delivery.



Ahsan M. Arozullah,
MD, MPH

Dr. Ahsan M. Arozullah is a physician and pharmaceutical executive with over 20 years of clinical research experience. He is also a member of the Board of Directors at Darul Qasim College, an Islamic institute that aims to make Islamic knowledge a contributor in the mainstream American academic narrative. Dr. Arozullah graduated from the Northwestern University Medical School and currently leads a global team of medical directors who provide world-class medical leadership to clinical development teams dedicated to creating the next generation of targeted oncology therapies.



Macksood Aftab,
DO

Dr. Macksood Aftab is Chairman of Radiology at Ascension Genesys Hospital. He is also clinical assistant professor at Michigan State University, Central Michigan University, and AT Still University. He completed his Neuroradiology fellowship at the Harvard Medical School and holds a Master's degree in History of Science from the Harvard Extension School. His research interests span across philosophy, theology and neuroscience.



BIOGRAPHIES



**Mohd Yusof
Mohamad, PhD**

Dr. Mohd Yusof Mohamad is an Assistant Professor at the Kulliyah of Allied Health Sciences, International Islamic University Malaysia. He received his undergraduate and postgraduate education in the field of Biomedical Sciences, Human Anatomy and Tissue Engineering from IIUM. Dr. Yusof also obtained a postgraduate Diploma in Islamic studies from the same institution. His research interests include tissue engineering, hadith, human evolution and comparative religion.



**Raudah Yunus,
MBBCH, MPH, DrPH**

Dr. Raudah Yunus is a researcher, writer and social activist based in Kuala Lumpur, Malaysia and currently pursuing a postdoctoral fellowship at the Medical College of Wisconsin. She spent her medical school years in Alexandria, Egypt where she also learned Arabic language and literature. Subsequently, she completed her Master of Public Health and Doctor of Public Health degrees at the University of Malaya in 2015 and 2018, respectively. Raudah's areas of research and interest include aging, elder abuse, health of marginalized populations and Islamic Bioethics.



**Shoaib Ahmed
Malik, PhD, MSc**

Shoaib Ahmed Malik serves as Lecturer in Science and Religion at the School of Divinity under the auspices of the University of Edinburgh. He brings a rich teaching experience spanning the US, Canada, Europe, the Middle East, and Asia. A standout alumnus of the University of Bath, Malik excelled as the top graduate in BEng of Chemical Engineering. He later became one of the first Muslim students to embark on an MSc in Philosophy, Science, and Religion at the University of Edinburgh. With two PhDs in Chemical Engineering and Theology, Malik is further enriching his Islamic studies under the guidance of Sh. Ali Laraki, among other scholars.



BIOGRAPHIES

Project Co-Lead



**Abdurezak
Abdulahi Hashi, PhD**

Dr. Abdurezak Abdulahi Hashi is an Associate Professor at the Department of Biotechnology, Kulliyah of Science, and a coordinator for the Multi-disciplinary Academic Postgraduate Programme. He obtained his Bachelor's, Master's, and Ph.D from the International Islamic University Malaysia in Theology and Comparative Religion. Since 2012, he has been a member of Reviewers, Qatar National Research Fund, Foundation of Qatar, Doha. In 2014, he was awarded the Best Teacher award at Kulliyah level and appointed as the editor of the Kulliyah of Science academic journal, Revelation and Science.



Bilal Ali Ansari, BS

Bilal Ali Ansari teaches Arabic, Islamic Law, and Hadith Studies at Darul Qasim College. He received his undergraduate education in Applied Behavioral Sciences at National-Louis University in Lisle. He also studied Arabic and Islamic Studies at the Jāmi'at al-Hasanayn in Faisalabad, Pakistan. His research interests include early Hadith methodology and nomenclature, Hanafī legal theory, education and curriculum development, mental health, and Islamic bioethics.



**Hamza Karamali,
MAsc**

Hamza Karamali teaches parents, teachers, and scholars how to protect Muslim children from losing their deen. He has a Bachelor's and Master's in Computer Engineering from the University of Toronto and in Islamic Law and Legal Theory from Jamia Nizamia in Hyderabad. He has studied and memorized traditional manuals with distinguished Muslim scholars and, on their recommendation, founded Basira Education where he produces courses, videos, and writes books and articles on the application of traditional Islamic theology to contemporary faith challenges from modern science and philosophy.



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BIOGRAPHIES

Theologians



**Omar Qureshi, PhD,
MEd**

Dr Omar Qureshi is a lecturer in Western and Islamic Philosophy and serves as the head of the Diploma in Contextual Islamic Studies & Leadership (CISLD) at Cambridge Muslim College. He earned his Bachelor of Arts in Microbiology and subsequently completed his M.Ed. in Curriculum and Instruction – Science Education, both from the University of Missouri – Columbia. Later, he earned his Ph.D. in Cultural and Educational Policy Studies with a specialization in the Philosophy of Education from Loyola University Chicago in 2016. Dr Qureshi also held the positions of principal and dean of academics at a parochial school located in the western suburbs of Chicago for seven years.

Project Interns



Alaa Yehia

Alaa Yehia graduated from the University of British Columbia, Canada with a Bachelor of Science in Cognitive Systems. She is currently a Knowledge Translation Intern with the Initiative on Islam & Medicine. Her current research interests are bioethics, specifically the integration of religion in culture in doctor-patient relationships as well as end-of-life care.



Khadijah Dhoondia

Khadijah Dhoondia is a sophomore at the University of Wisconsin-Madison studying Biology. She is involved with the Leukemia and Lymphoma Society and Alpha Epsilon Delta, a pre-health honor society. She is also the Chief Marketing Officer of LOAF, a Muslim non-profit that provides essential items to Milwaukee communities in need. Khadijah is passionate about the intersection between Islam and science, and aspires to work in the medical field.



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ESSAYS

Disclaimer: The work presented by each student is reflective of their own thoughts, ideas and opinions. The essays do not necessarily represent the views or opinions of the collaborators or organizers of the seminars. The images of the students included in this section are for illustrative purposes and may not necessarily depict the students who authored the accompanying essays.



AAINA AJLAA BINTI MOHD JALANI

International Islamic University Malaysia

Concentration: Medical Sciences

“There is no conflict between Islam and Science”. Before joining this seminar, this was a statement I heard from time to time. As a Muslim student pursuing science, I personally do believe that Islam does not clash with science. This is because when we gain more knowledge, we see more evidence of the existence of Allah. However, because of my lack of resources and knowledge, I was unsure how to navigate the relationship between Science and Islam. Moreover, I was also afraid to explore this intersection because I thought that by doing so, there will be more confusion on my part, thus weakening my faith in Islam. Nevertheless, the seminars have completely changed the way I viewed the intersection of Islam and Science, and showed me a way to integrate both domains in my daily life as a bioscience student.

"The seminars.... have completely changed the way I viewed the intersection of Islam and Science, and showed me a way to integrate both domains."

There were many interesting topics that were discussed in the seminars, but in my opinion, the topic that stood out most was the talk given by Dr. Abdurezak Hashi. He spoke about free will and raised the question of whether we truly have the freedom to make any decisions in our lives, or whether are we programmed by Allah to make all the decisions that we have made throughout our existence. The way Dr. Hashi explained the topic genuinely piqued my interest. I learned that some parts of our lives have already been determined by Allah such as our ethnicity and biological sex (female or male) while some others are determined/ influenced by our own life choices. Being able to make choices means that we as Muslims are *mukallaf* or accountable for our own actions.

Prior to the seminar, I had always pondered upon the purpose of our existence if Allah had pre-destined our ending (whether we were going to Heaven or Hell). However, the seminar truly shifted my thinking about the notion of destiny. I now understand that our whole purpose in this life is to attain the pleasure of Allah by doing what is good in His eyes and avoiding what is evil. Something else that inspired me was the passion shown by all the instructors, their enthusiasm for sharing their knowledge, and the way they answered our questions. I aspire to be like one of them.

Expanding further on the conflict between free will and determinism, Dr. Hashi mentioned that materialists believe that humans have absolute authority in making every decision in life. Materialists also argue that religion has nothing to do with the choices that we make and that no divine power exists behind all the things that happen to us in life. This type of statement and mentality is pervasive and has caused a lot of confusion to Muslims as it denies the existence of the divine. The seminar contents strongly resonated with me, mainly because I used to question a lot about the daily choices we make, how these affect our destiny, and whether we truly have the authority to determine our fate. I also pondered a lot about my future, whether we truly have an active role in shaping it the way we want, or is it something completely pre-destined. The seminar has helped clarify those questions of mine; now I know that we do have a role in our future, and we need to ensure that the path we choose takes us in the right direction.

The 'conflicts' discussed during the seminar were presented clearly and simply. The instructors eloquently explained the potential solution to reconcile conflicting ideas. What I can eventually conclude is that one of the ways to resolve any conflict is by seeking opinions and knowledge from those who are credible. This is to ensure that those opinions are in line with what the Shariah has taught us and with what Allah has clearly mentioned in the Quran. Other than that, I think that as a Muslim, we need to be more proactive in seeking knowledge so that we will not blindly follow what others have to say, especially when their ideas are not backed by sound evidence.

All in all, the seminars have helped me see science and Islam from a different perspective. I felt that I had gained more clarity in both domains. In addition, I began to realize that Islam and Science are not separate from each other. Both fields can be used simultaneously in a harmonious way. The program boosted my confidence to share my viewpoint as the instructors encouraged us to express our thoughts with our friends and ask questions. As a future physician, I will try my best to integrate Islam and bioscience in my professional work and practice. I believe this will help my patients understand and cope better with their ailments, in trying times. I will also strive my best to pursue more learning at this intersection, now that I am convinced that the two can be harmonized without causing too much confusion.





ABDULLAH SYED

Salam School - Milwaukee, WI

As a Muslim teen living growing up in a society that encourages curiosity, our ideals and values tend to change according to surrounding influences thus preserving our religious beliefs and identity can be challenging. In addition, secular education can sometimes be at odds with Islamic teachings we receive at home. Many religious individuals lose their faith or 'leave their faith coat at the door' before entering the science lab due to perceived conflicts between religion and science. In early 2023, I participated in the 'Exploring Bioscience and Islam' intensive seminar series, which attempted to address the five Big Questions about the human being. The program was a real eye-opener as it brought to my attention the common 'conflicts' that lie at the bioscience-Islam' intersection, and ways to reconcile differences of views.

"As for me personally, I find it vital to practice as a physician while keeping my religious beliefs intact. Earlier, I had thought that entering a medical school or taking up a job as a doctor means I have to give up or hide my religious orientation, but this seminar has proved quite the opposite. "

I found many benefits of attending this program. First, it clarified a lot of confusion in my mind about some of the perceived tensions at this interface. Having clarity on fundamental issues about the self is critical to strengthen one's faith and religious identity. As a student belonging to a faith minority in the US, I needed a strong foundation for more in-depth studies of my own belief system and how it relates to the world. The seminars gave me just that. Second, the program has expanded my range of career options and choices by equipping me with knowledge and awareness about diverse fields at the bioscience-theology intersection.

Unlike how religion was perceived and practiced in the past, today's modern community tends to view religion more suspiciously. Scientific proofs are demanded to verify almost everything, including religious and moral values. God is considered non-existent, because He is invisible and unreachable through our five senses. Students with religious orientations can easily face crises in this situation; while some can rely on faith alone to preserve their religious belief and connection to God, others may need more than religious reassurance. They need arguments from the scientific view that validate their faith, or arguments on scientific views from the theological perspectives.

This may at first appear like a trivial issue, but many Muslim students have struggled and experienced spiritual crises because of their inability to reconcile what they hear and see at the science-religion interface. For these people who need more than just 'faith' to gather their sense of religious identity, educational programs that incorporate rational thinking and empirical views are extremely helpful.

This seminar series has helped me discover the importance of religion as a cornerstone in human life. Seeing the connection between bioscience and Islam makes me realize that religion plays a huge role not only in various mundane activities but also in explaining the meaning of scientific findings. There are various Qur'anic verses that discuss scientific phenomena, directly or indirectly and connect natural phenomena to God's wonders and signs. As a Muslim student who aspires to become a scientist or physician, the ability to grasp the insights and wisdom behind these verses increases your love for your field of study and work because you get to bring both parts of your identity together. As for me personally, I find it vital to practice as a physician while keeping my religious beliefs intact. Earlier, I had thought that entering a medical school or taking up a job as a doctor meant I had to give up or hide my religious orientation, but this seminar has proved quite the opposite.

Several aspects of the program made it highly engaging. Firstly, the instructors were trained, and competent and came from various countries. It was truly an international team of experts from various fields. Secondly, the seminars were delivered in diverse formats to keep us engaged; there were lecture sessions using slides, short video clips, model dialogues, games, competitions and case studies. Thirdly, I found myself surrounded by new and like-minded peers from different schools. Last but not least, there were great food and wonderful prizes! The organizing team went out of their way to accommodate for our needs and requests.

Issues at the intersection between bioscience and theology are critical and will continue to be debated in the future. Given the ever-expanding biomedical technology, problems at this interface will only get more complex. A program like the 'Exploring Bioscience and Islam' seminar series is exactly what Muslim students need to build a strong foundation before they enter the 'real world', where their religious values can be confronted and their professional identity questioned. After completing the four-day session, my understanding of bioscience and Islam tremendously improved. Now I can appreciate science not just as one of the subjects in the classroom, but as a path to gain a deeper connection with Allah.





AINA SAFIYYA BINTI SHAHREEL RIZA

International Islamic University Malaysia

Concentration: Biosciences

I decided to join the 'Exploring Bioscience and Islam' seminars since they allowed me to spend more time at the campus while gaining new knowledge on a topic that has always triggered my curiosity. The seminar topics focused on the five 'Big Questions' about the human being. These questions include: a) What is the origin of human beings; b) What is its essential natures; c) Are humans moving to a transhuman future; d) To what extent are our actions fated, and; e) Are human beings unique in the universe?

"I felt like the learning experiences have empowered me and assisted me in carving a path to become someone better, religiously and professionally. "

The opportunity to engage with this learning exercise and gain knowledge in such a unique area has left me feeling immensely grateful. As a Muslim, I find these topics often overlooked - or ignored - despite them being apparent in our daily lives. After completing the seminars, I found myself thinking about what was discussed more often than usual and the contents I learnt have reminded me to be more careful with my actions. I felt like the learning experiences have empowered me and assisted me in carving a path to becoming someone better, religiously and professionally.

At a personal level, I had struggled with many scientific questions that seemed to contradict Islam. Amazingly, most of those questions were addressed in the seminars. The reason I joined the program was to seek answers to my burning questions, so I was happy I made the decision to participate. Perhaps the session I enjoyed most was the one on fate, free will and genetic determinism. The instructors explained how in certain circumstances, the characteristics of humans can be pre-determined, whereas in other domains, humans are granted free will to conduct their lives as they wish. From what I have understood, there is a clear distinction between free will and fate. Free will is a condition where humans have the capacity to make choices and act accordingly, while fate refers to events that are set/determined by God.

Perhaps from the scientific lens, these two cannot co-exist as they contradict one another. In Islam, however, fate and free will can be regarded as overlapping. Let's consider this example: Aminah is born into a wealthy family, and she stays humble despite her wealth and commits herself to regular charity. Here, Aminah being wealthy has been pre-determined (fate); the Islamic term is qada'. Freewill is portrayed in her

choice to do good deeds with what Allah has granted her. Free will for humans in Islam is the fulfilment of one's fate. She has fulfilled her wealth in a good way, aligned with God's wishes. In conclusion, it is critical to remember that we will all be held accountable for our actions and that every action has a consequence.

Next, I learnt about human enhancement and transhumanism. What exactly is human enhancement? It is improving a bodily function beyond its original/natural capacity. It is distinct from therapy, which is commonly practised in medicine. Therapy generally refers to the restoration of bodily function (from a deviated state).

What makes transhumanism controversial is when the following question arises: to what extent can we use machines and technology to "upgrade" humans, that do not defy or change Allah's creation? In medicine, advancement in technologies has helped many patients and doctors. However, in Islam, we have to consider whether is permissible and what is not, within the boundaries of the law. Philosophically, what will happen as these technologies continue to advance? How and where will humans draw the limit?



Other than bioethical issues that will emerge, Muslims and other religious communities may face the challenges of these technologies claiming to 'replace God' through their creative capacity. This can easily lead to human arrogance and an attitude dismissive of religious and moral commitments.

The knowledge I have gained throughout this program is vital to me as a Muslim and future medical practitioner, as this intersection is closely related the questions a physician might encounter in his/her practice. A number of educational and research institutions today promote approaches to, and understanding of, science that may not necessarily be in harmony with the Islamic worldview. As a bioscience student and as a future Muslim physician, I am now aware of the importance of critically looking at these approaches, and taking other sources of knowledge into consideration. Science, as I learned, is not the ONLY way to know establish real knowledge; besides empirical knowledge, there are relevatory and rational knowledge. That is not to say that I should disregard science or empirical evidence, but I should have a wider horizon of perspectives and not view science as something absolute.

I am forever thankful to the university and the research group for this insightful program. The seminars remind that worldly matters - including my learning of bioscience - and religious beliefs - cannot be divorced from each other. Conforming to the lyrics of the university's anthem, "Merging faith and knowledge", I now aspire to be a better Muslim scientist and merge the domains of science and religion more effectively.



A.H.

International Islamic University Malaysia Concentration: Medical Sciences

Albert Einstein once said, “Science without religion is lame, religion without science is blind.” The apparent conflict between religion and science has become a widespread debate among scientists and theologians worldwide, including the Muslim community. To further understand this, we must begin by defining the terms “religion” and “science” and how these two words are related.

What is religion? Religion is a set of organized beliefs, practices, and systems that most often relate to the belief and worship of a controlling force, such as a personal god or another supernatural being. As Muslims, we believe in Islam as a set of beliefs and teachings that embody the code of life which Allah, the Creator and Lord of the universe, has revealed for the guidance of mankind. On the other hand, science can be thought of as both a body of knowledge (the things we have already discovered) and the process of acquiring new knowledge through observation and experimentation—testing and hypothesizing. Both knowledge and process are interdependent since the knowledge acquired depends on the questions asked and the methods used to find the answers. How do these two points relate to one another? Is there any intersection? These were among the questions I have long pondered upon.

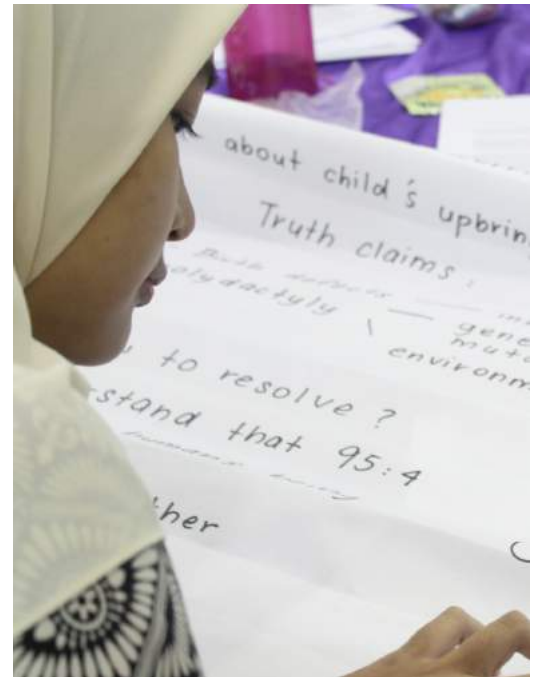
"The seminars.... have completely changed the way I viewed the intersection of Islam and Science, and showed me a way to integrate both domains."

Participating in the ‘Exploring Bioscience and Islam’ seminars has helped me explore my long-held curiosity and given me a fresh insight into the science-religion intersection. I now firmly view Islam and Science as two complementing domains. The discussions we had in the seminars have shifted my thinking process; I now realize the importance of critically analyzing information from different perspectives before making conclusions. The first seminar on epistemology – the study of knowledge – has especially played a huge role in facilitating this paradigm shift. During this seminar, we discussed the different types of knowledge and propositions (truth claims), and how to judge them. We also learned about the importance of determining the level of certainty of a truth claim. These are perhaps the elements that differentiate the Islamic epistemology from the naturalistic epistemology.

In the subsequent seminars, our newly learnt skills in epistemology were applied to a variety of perceived tensions at the bioscience-Islam intersection. For instance, in Seminar 3, we discussed the topic ‘What does it mean to be human? Neuroscience, Artificial Intelligence, and Human Nature. The propositions given were “we can know the existence of the soul through self-inspection” and “consciousness can be simulated by artificial intelligence (AI)”. The first proposition is a rational judgement, which means that we can look inside ourselves and realize that experiences of pain, pleasure, happiness, sadness, humility, arrogance, gratitude, and ingratitude, reside not within our physical body. This proposition can be regarded as qat’i (certain).

Meanwhile, the second proposition is an empirical judgement and is considered zanni (probable). Why? To have consciousness is to experience worldly sensations, perceptions, feelings, awareness, and intentionality as humans do. The latest technology today has not been able to prove that AI has that feature. Whether empirical methods can determine this is yet to be answered. Therefore, to solve this conflict, we can conclude that the first proposition has a greater level of certainty and thus should be prioritized over the second one.

My perspective on science has changed as a result of joining this seminar. I used to believe that science - as a studied subject - was the only field I need to master, in order to become a good doctor. Now I know it’s more than that. The seminars have also given me the opportunities to interact with the field experts, share my experience and ideas, and ask difficult questions. Additionally, the small-group discussions were extremely useful. I especially enjoyed the “Six Fingers” case study where we were assigned to a group and given a case study guide to help us brainstorm and identify the ‘conflicts’ and ways to approach them. I felt that the experience had a profound impact on me and my peers as it allows to exchange thoughts and gain new insights from the instructors during the Q&A session.



In summary, this program was a learning experience that had kept me and my peers deeply engaged, provided us with high-quality materials, and given us a deeper understanding of science and theology, in addition to allowing space to express ourselves. The multi-modal approach has improved my critical thinking, communication skills, and confidence. While there are many positive impacts of these seminars, the most important is how it has changed the way I think and reinforced my ambition to become a physician. Being aware of my religious identity now, I am inspired to learn more about how Islam and science interact.



BASEL ABDALLAH

Universal School - Bridgeview, Illinois

Bioscience is the study of living organisms, their structure, functions, and interactions with the environment. It encompasses a wide range of disciplines, including genetics, microbiology, ecology, and physiology. In Islam, the study of bioscience is highly regarded and encouraged. The Quran, the holy book of Islam, provides numerous examples of the importance of bioscience in the religion. Science, or the natural world, is not seen as a separate entity. From the Islamic perspective, knowledge or evidence can be empirical. But it can also be rational and revelatory. This means that Islam does not view empiricism as the only way to establish knowledge.

Empirical evidence is critical in the field of bioscience, and it is also essential in Islam. Islam encourages the acquisition of knowledge through observation and experience. The Quran states, "We have sent down to you the Book for the people in truth. So whoever is guided - it is for [the benefit of] his soul, and whoever goes astray only goes astray to its detriment. And you are not a manager over them" (Quran 39:41). This verse implies that knowledge is essential, and it should be sought after for the benefit of oneself. Relating this to science is as easy as one plus one. As the scientific method is an approach to acquiring knowledge through experimentation and observation, is it considered beneficial and thus should be pursued. Experimentation of worldly matters is regarded as a path to understanding God's creation.

"As a high school senior, I have been struggling to decide on my life and career path, partly due to the confusion at the science-religion interface. This program has had a profound impact on me. It helped me figure out that 'puzzle' through guiding my thinking process."

Revelatory evidence is another important aspect of Islam. The Quran is considered the ultimate revelation, providing guidance to humankind on all aspects of life. Science on the other hand is not a separate entity, as the Quran makes numerous references to biological phenomena. For example, the Quran says, "And He sent down rain from the sky and made grow thereby gardens of joyful beauty which you could not [otherwise] have grown the trees thereof? Is there a deity with Allah?" (Quran 27:60). This verse highlights the significance of water in plant growth and how it is a divine blessing. Indirectly, the verse encourages the study of bioscience to gain a deeper understanding of natural phenomena and divine wisdom.



Rational evidence is another type of evidence included in the Islamic epistemic framework. Islam emphasizes reason and logic, and this is not in contrast to the principles of scientific methods. When examining the intricate details of Allah's creation, rational evidence becomes a tool to help us make sense of our experiences and perceive the meaning of this life. Many verses in the Quran support the notion that humans possess some kind of intuition and innate knowledge - though not complete or absolute - to grasp some fundamental truths of this world. By adhering to this rational thinking, scientists can uncover the mysteries of life while staying true to the divine call for introspection and truth-seeking. As a result, rational evidence not only complements our scientific understanding but also reinforces the spiritual connection to the world around us.

Islamic teachings focus a lot on human life, and bioscience has the potential to improve human health and well-being. The Quran states, "And whoever saves one life, it is as if he had saved all of humanity" (Quran 5:32). This verse demonstrates the importance of protecting human life, and bioscience provides numerous opportunities to achieve this goal. For example, advancements in genetics have led to personalized medicine, which can tremendously improve health outcomes. Additionally, research on infectious diseases has led to the development of vaccines, which have saved countless lives. Therefore, the study of bioscience, when applied to improve human health and well-being, is considered praiseworthy in Islam.

Finally, it is incredibly important to note how the seminars have answered some of my lifelong questions, as a Muslim growing up in Western society. With the current amount of hostility against the Muslim community and other faith minorities - politically and ideologically - it is a big challenge for Muslim youths to preserve their identity and religious traditions. The apparent science-religion conflict only makes the situation more complicated. This has left many youths like me in confusion and sometimes, crises. As a high school senior, I have been struggling to decide on my life and career path, which is partly due to the confusion at the science-religion interface. This program has had a profound impact on me. It helped me figure out that 'puzzle' by guiding my thinking process. This new understanding and the skills I acquired will not only affect my professional journey in the future, but it will also influence every step of my life.



FADLI ABDIRAHMAN

Salam School - Milwaukee, Wisconsin

It is a deterrent to human excellence to chain curiosity when explaining our origin and purpose in this universe to the limited capacity of human knowledge. Humankind needs help and support while navigating through this unique galaxy, and this is where the role of revelation comes in. Yet, in order to reconcile Islamic and scientific perspectives when clashes do occur, as Muslims, we cannot simply compare revelatory evidence to scientific evidence and claim the superiority of the former. There is more work to do and we need a more holistic approach and greater clarity to manage this dilemma.

"I am no longer willing to "leave Islam at the door" in my career journey because I now see that a harmonious co-existence between science and religion is possible. "

As someone pursuing a career in the medical field and as a Muslim youth growing up in the West, I am not always surrounded by people who share my faith and worldview. In Islam, revelatory evidence is considered definitive. This understanding has given me the confidence to pursue my current interest and practice my deen harmoniously, even when facing a contentious issue like evolution. Throughout my education years, I have been continuously exposed to the concept of methodological naturalism where only empirical judgments are accepted. From my observation, evolution is often presented not as a theory but rather an established fact that everyone agrees on.

In the seminars, we were introduced to Islamic epistemology, which expands the spectrum of knowledge and evidence. In addition to empirical judgment, Islam upholds revelatory and rational judgments. Thus, discussion of the same topic can become drastically different. For instance, revelatory evidence in the Quranic verse: "Who created you, then formed you perfect, then balanced you even out" [82:7] would be used as proof that God created mankind, or that the Divine has a role in this process. This verse contests the idea of human evolution - or evolution that is without any divine intervention - which is a common belief among today's scientists. Ignoring revelatory sources thus deprives us of a perspective lacking in the mind of a naturalist.

Constantly holding our religious creed against the standard of science can also be problematic. This is because science evolves and changes from time to time, according to the latest findings. We should certainly not dismiss science as a whole as scientific findings have, without doubt, made tremendous contributions to human well-being today. Rather, as Muslims, we need to be clear with the issue/conflict we are dealing with, where the source of knowledge is coming from, and what the level of certainty is.

I have realized that the tendency to equate science with absolute truth can be highly limiting.

Previously I found it difficult to reconcile the Islamic and scientific views on free will. In Seminar 5, we watched and discussed a video where Dr. Michio Kaku challenged Einstein's idea that humans do not have free will (Einstein claimed that our actions are preordained). However, other scientists disagreed with Einstein's logic, and they proposed alternative explanations to show how our actions and future cannot be predetermined. That particular moment was an eye-opener for me and significantly changed how I understand free will. What Dr. Kaku presented was perfectly in line with revelatory evidence. He mentioned, "Man has the choice to guide his/her desires to the right way," and "Man is accountable for directing the fulfillment of his/her inborn desires." Knowing this gives me a lot of mental peace and makes me feel empowered. As a Mukallaf, I fully acknowledge that Divine knowledge encompasses all, but the capacity to decide and make choices is mine.

I was largely inspired by the sessions that shed light on how to integrate Islamic and scientific perspectives - and make sense of revelatory knowledge and empirical data - on the questions of human evolution and free will. I now see more hope in efforts to combine these two areas. After listening to the insight and guidance provided by the seminar instructors, I am no longer willing to "leave Islam at the door" in my career journey because I now see that a harmonious co-existence between science and religion is possible.





HADEEL ABDELJAWAD

Salam School - Milwaukee, Wisconsin

Born into a Muslim family and having attended a private Islamic school my entire life, questioning religion or its core principles is almost unthinkable. I have to say that I have followed and practices many of the Islamic fard and sunnah not because I fully grasped the exact reasoning and purposes, but everyone around me was doing it. So, I followed the crowd without much questioning. And even though I have attended multiple Islamic studies classes, I never really had my own perspective or my own thoughts when it comes to religion. However, the COVID-19 pandemic shook me and 'woke me 'up'. I began to see things differently and question my relationship with God. The global crisis had somehow made me realize how fragile we are, and how much we are in need of a greater power for refuge and protection. These reflections have sparked my curiosity about religion and motivated me to delve into issues that seem at odds with religious beliefs.

As I rekindled my relationship with Islam, I also developed passion for medicine and biosciences. The complexity of our body and the incredible details of how each body component works fascinated me. But learning more science then led me to encounter difficult questions that challenged my religious convictions. Subjects like human evolution, human enhancement, free will, genetics, and the world origin sometimes threw me into confusion. Being a committed Muslim, I had full trust in the Divine, but I knew I had more work to do, to understand how views that seem to lie on two opposite poles of a spectrum can be harmonized.

"This program has made me realize that there are always ways to connect science with theology... The learning experience has strengthened my Muslim identity and my career aspiration. "

The opportunity to participate in this program was a real blessing. It has allowed me to re-connect with my passion for science and religion and helped me answer many questions. Many of the discussions we had were truly enlightening; the instructors talked about the controversy of human evolution and how Muslims can reconcile this 'clash'. They explained the process of evolution from the scientific view, and what revelation says about human origin. More importantly, where do we, as future Muslim scientists, stand?



They also talked about the idea of bodily therapy vs. enhancement, the meaning and aim of each, and discussed the Quranic verse that warns humans against ‘changing God’s creation.’

In regards to free will, I learned that this world is a test, and while certain aspects of our lives are pre-determined, we are given the freedom to make choices in many other aspects. Therefore, we must make use of this freedom to make the right choices for we will be held accountable for whatever action we take. Interestingly, some people use the ‘determinism’ argument to excuse themselves from wrongdoings. In Islam, humans are considered unique compared to animals and angels mainly because of the free will granted to them. This makes us special, as we have the capacity to worship (or disobey) Allah (SWT) with full intention.

These seminars have solidified my passion for a career in bioscience, as I will be a freshman student at the university by Fall. Being able to combine Islam and Science will allow me to research topics of interest to me, to further strengthen my faith and knowledge. Having known that the seminar instructors had attended prestigious universities including the Ivy League schools inspired me; I should take lessons from their determination to pass their wisdom and knowledge to the younger generation. Drawing inspiration from this encounter, I hope to major in Neuroscience while at the same time pursuing Bioethics and Public Health. As I plan to work in the hospital setting, I will make use of my intellectual engagement at this intersection to help individuals who struggle with physical ailments and spirituality.

This program has made me realize that there are always ways to connect science with theology, and how revelatory sources demonstrate those connections. The learning experience has strengthened my Muslim identity and my career aspirations.



HUDA FATIMA

College Preparatory School of America - Lombard, IL

From a young age, I have always had a lot of curiosity about science and religion. As I entered high school, this area remains 'mysterious', and I continued to gather questions in my mind. The recent seminars I attended was an invaluable experience, as they helped me explore the ways in which Islamic theology can inform and enrich our understanding of modern scientific advances. Through lively discussions, engaging lectures, and hands-on activities, I was able to gain a deeper understanding of the complexities of this relationship and the ways in which it can help us to answer some of the most burning questions that face humanity today. I made the right decision by participating in this program; it resolved my questions and deepened my understanding of the relationship between Islam and bioscience.

The relationship between Islam and bioscience is complex and dynamic. One of the main ideas I learnt from the seminars was how the different types of knowledge sources - empirical, rational, and revelatory - are useful to understand and explain this relationship more holistically. For instance, empirical evidence is based on observation and experimentation. In the field of bioscience, empirical evidence is used to understand the natural world and how it works. This includes the study of genetics, anatomy, and physiology, among other fields. Proponents of bioscience argue that this type of evidence is critical to understanding the natural world. On the other hand, rational evidence is based on logical reasoning and analysis. In the context of bioscience, this includes the use of deductive and inductive reasoning to understand the natural world. We can use rational evidence in our everyday lives to support our arguments, including the use of analogical reasoning to draw parallels between the teachings of the Quran and modern science. Revelatory evidence in turn is based on divine revelation that comes from the Quran. This type of evidence is undeniable for Muslims but is not readily accepted by many proponents of modern science. To make judgments, it is important to know where a truth claim is coming from and what level of certainty the evidence is. Of equal importance, I learned that bioscience can be better understood in the light of Islam when some Quranic verses are interpreted in a figurative manner.

Given my ambition to pursue a career in medicine, these seminars have been particularly helpful in developing my critical thinking skills and informing me how to better assist patients in ways that align with their religious concerns. Additionally, understanding how the 3 types of evidence interact in the relationship between Islam and bioscience makes me appreciate the diversity of perspectives and approaches that exist. This is a critical element for working effectively with people from different backgrounds and worldviews as we can become more understanding and tolerant toward those around us.

The seminars cleared up various misconceptions I had in mind when regarding the question of free will and determinism. In Islamic theology, the concept of free will versus determinism has always been a hotly debated topic. At its core, the question revolves around whether human beings have the ability to make choices that are truly independent of external factors or whether their decisions are predetermined by a higher power. While there are different schools of thought on this issue, many Islamic scholars believe that free will and determinism are not mutually exclusive, and that it is possible to reconcile these two seemingly opposing ideas. One way in which Islam reconciles free will and determinism is through the concept of divine decree, or qadar. According to this belief, God has knowledge of all things past, present, and future, but this does not mean that human beings are not free to make choices. Rather, God's knowledge of what will happen in the future is based on his awareness of what individuals will choose to do, rather than his predetermined control over their actions. In this way, the concept of divine decree allows for both free will and determinism to coexist.

"I made the right decision by participating in this program; it resolved my questions and deepened my understanding of the relationship between Islam and bioscience."

From a human perspective, the question of free will versus determinism is one that has fascinated most people for long periods of time. Understanding the Islamic perspective on this topic can satisfy our curiosity by providing a framework for understanding the interplay between our own choices and the forces that shape our lives. It can also help us appreciate the complexity of human experiences and the ways in which our own actions are intertwined with larger forces beyond our control. This debate was one of the main questions that was never answered since I was a child as nobody was able to properly explain it to me.

The intensive seminar series was an enlightening learning experience. I gained a comprehensive overview of the complex and dynamic relationship between Islam and bioscience. This knowledge allows me to explore the different types of evidence to reconcile the seemingly opposing truth claims. Overall, I am grateful for the opportunity to know about this topic better. No doubt, the insight and wisdom obtained will guide me for the rest of my life.





ILLHAM SAID

MCC Academy - Skokie, IL

When I first heard about the program, I did not have much interest in it. My first impression was that one had to be a science fanatic to attend it. But after giving it a second thought, I realized it was a unique opportunity that could perhaps, benefit me. After all, even though I was never a science fanatic, I did have some curiosity about seeing science from the Islamic perspective. As I had hoped, the seminars turned out to be very insightful! They helped me understand how to navigate this intersection as well as where Muslims stand on topics that often cause 'tension' at the science-religion interface. More importantly, the program equipped me with me fundamental concepts that prepared me for future encounters with science.

"I now have a very different view of science and Islam. I used to think they are polar opposites. The scholars however have helped us identify the connections between Islam and science and the role of theology in the scientific field "

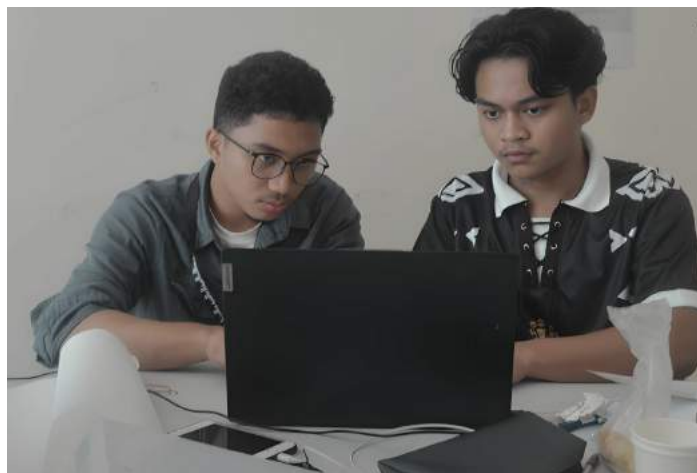
The seminars covered topics like epistemology, evolution, transhumanism, neuroscience, free will, and extraterrestrial life. It was a novel learning exercise because such topics are not typically discussed in an average science classroom. In a science classroom, religion is often 'left at the door', and you are not encouraged to bring in religious ideas. However, as committed and practicing Muslims, we view religion differently; we carry Islam in every aspect of our lives. Therefore, when we learn science, we must know where Islam stands in relation to the subject. For example, biological evolution upholds that all living organisms, including humans, developed from a common ancestry. This is at odds with Quranic verses that narrate Adam's creation by God as the first human being. So how do make sense of the fact that chimpanzees and apes have very similar DNA to humans? This could imply that all creatures belong to one, single Creator. Or it could mean we have not discovered enough. What I learnt from this program was that we do not have the answer to everything, and that is okay. As Dr. Qureshi explained in his seminar, we may not know everything, but we must be able to distinguish between scientific ideas that we can and cannot accept as Muslims.

I have heard of Muslim college students who went into their first biology class and came out utterly confused. In all honesty, had I not been exposed to this program and those discussions on evolution and neuroscience, and how to understand them from the Islamic perspective, I would have been lost too.

The knowledge I obtained from these seminars have assisted me tremendously during one of my biology classes. Recently, I enrolled in Human Genetics: Biology 104 course. On the first day, the professor told us that the course will be taught from a secular point of view. We started learning about genes, and processes that occur to make and replicate our DNA. Then, we were taught about how our genes evolve over generations and how the process of natural selection occurs. The discussions I had in the seminar series prepared me well and greatly assisted in me navigating the classroom session with less confusion. I was able to distinguish between the different elements of evolution, and what was compatible or not compatible with the Islamic perspectives.

As a result of the seminars, I now have a very different view of science and Islam. I used to think they are polar opposites. The scholars however have helped us identify the connections between Islam and science and the role of theology in the scientific field. There are clear boundaries drawn by religion, but there are overlaps too. Earlier, I knew very little about artificial intelligence (AI) and transhumanism, but now I have a better idea about these two developing areas that can be very contentious. I also realized how Muslim scientists and doctors will have to deal with these topics as AI and transhumanism begin to dominate the health discourse in the near future.

In one of the seminars, we talked about neuroscience, the human soul and consciousness. I was particularly interested in this given my plan to study psychology when I enter college. Interestingly, the seminar instructors introduced me to an aspect of psychology I had never considered. I could now see where we as Muslim stand, and how do we approach this subject matter compared to the views of neuroscientific



reductionism. To Muslims, being human means you possess a soul and consciousness, and your purpose is to develop the soul spiritually. On the other hand, neuroscientists who dismiss religion would typically argue that being human is to have a brain, and this has nothing to do with spiritual commitment.

Lastly, I came to know that we still do not have the answer to many questions yet, and that we must be okay with not knowing everything. As humans, our knowledge is limited, and this realization should drive humility and humbleness. Endowed with a powerful intellectual capacity, we are encouraged to keep seeking knowledge. But ultimately, absolute knowledge resides with God.



MUHAMMAD ATIQULLAH MURSYIDI BIN MOHAMAD

International Islamic University Malaysia Concentration: Medical Sciences

In the ever-evolving landscape of modern society, the pursuit of knowledge knows no bounds. Science is one of the fields used to save lives and improve human well-being. It has a special place in today's modern world, and it may lead to benefits and harm. As Muslims, we believe that all knowledge comes from God; He knows things the human intellect is not able to grasp, such as the unseen matters (Sam'iyyat). In this regard, Muslim students studying science - including bioscience and medicine - must be aware of the issues that may cause "conflicts" between science and religion. These issues generally lie at the intersection between the two knowledge domains.

I joined the 'Exploring Bioscience and Islam' seminar series because I was convinced that the learning experience would enhance my personal and professional journey as a future Muslim physician. I was not mistaken. The program shifted the way I think about science and Islam.

"The seminars.... have completely changed the way I viewed the intersection of Islam and Science, and showed me a way to integrate both domains."

The discussion we had on Islamic epistemology gave me a strong foundation on how to approach any scientific truth claims that seem to conflict with Islam. In the seminar, we discussed how as Muslims, we can use the Islamic epistemic framework to systematically reason and find answers that align with Islamic teachings.

Modern science promotes ideas like biological evolution and transhumanism, which contain elements at odds with Islamic beliefs and rulings. For instance, transhumanist proponents may strive toward immortality by means of removing human frailties and fighting death. This notion contradicts Islamic teachings, which ascertain death and immortality only in the afterlife. Meanwhile, Darwin's theory of evolution posits that species evolve over time through natural selection and that humankind originates from man-like apes in Africa. I learnt that it is critical to distinguish between human evolution and the evolution of other living beings, and based on what revelation says (about Adam's creation), Muslims should be clear about what to accept and what not to accept. This does not

mean we reject evolution entirely, but we are being selective and more nuanced in our approach, as some elements of biological evolution are in fact, not in contrast with the Qur'an.

Throughout the program, the scholars emphasized the nature of science and scientific experiments, how scientific findings can change over time, and how some scientific evidence can be regarded as probabilistic. We discussed in length how to categorize sources of knowledge and how to determine the levels of certainty when encountering so-called a truth claim. Scientific evidences derived from probabilistic methods are considered zanni (ambiguous/uncertain). In contrast, revelatory sources - provided they are correctly interpreted - are generally considered qat'i (definitive).

The program was fun and engaging, and it has motivated me to seek more knowledge at this intersection. The instructors gave useful and practical advice on how to deal with potential conflicts between my faith and scientific learning. I learnt that many perceived conflicts can be resolved with a proper understanding of Islamic teachings and scientific principles. I also learnt that Islam is not anti-science. Rather, it encourages mankind to investigate the natural world to better understand Allah's creation and His wisdom. In addition, I gained insight into bioethical issues in today's medical practice. As a Muslim medical student, this is a critical area for me. The group discussions and case studies showed me how Islamic teachings can guide us in making moral decisions, respect human dignity, and promote social justice in the medical profession.

Overall, the seminar series was a transformative experience for me. It built my literacy on Islamic epistemology; this will help me pursue scientific knowledge and navigate difficult questions. I learned to approach these conflicts between my faith and science with intellectual humility and dedication to truth-seeking. Thanks to this program, I now feel more inspired to excel in my studies, learn more about bioethics, and actively contribute to society. I am grateful to have had this learning exercise, and I am eager to begin a lifelong journey of seeking knowledge and serving God and the community.





MUHAMMAD IMRAN BIN MOHD ROPIDI

International Islamic University Malaysia Concentration: Human Sciences

In today's modern life, many people believe that religion and science are incompatible with one another and should be separated. Secularization of knowledge is said to have contributed to the advancement of science and technology we know of today, while religion is gradually restricted to the private space. However, contrary to popular belief, Islam is not a religion merely filled with rites and rituals, rather its teachings pervade every aspect of life. 'Secular' sciences like physics, chemistry and biology are not seen as separate, from the Islamic view. Islam encourages advancement in knowledge to benefit mankind; this is a way to worship God. The dichotomization of knowledge - secular vs. religious - has led to confusion and conflicts. As a Muslim student studying the human sciences, I decided to join the 'Exploring Bioscience and Islam' seminar series to answer my curiosity and gain more insight into this contentious area.

Addressing five big questions about the human being, the seminar covered the following topics: epistemology, human evolution, artificial intelligence, transhumanism, extraterrestrial intelligent life, and free will vs. genetic determinism. To be frank, I used to avoid delving into some of these difficult topics, but I thank God that the seminars have provided me with some answers I have been searching for.

"The seminars.... have completely changed the way I viewed the intersection of Islam and Science, and showed me a way to integrate both domains."

The first 'conflict' we discussed was the subject of human evolution. Scientists assert that modern humans trace their root back to a common ancestor with other living beings. The Qur'an, on the contrary, describes humans as descendants of Prophet Adam, the first human created by God. While this may imply that that evolution is inapplicable to humans, Islam does not explicitly reject the possibility of other living beings as an outcome of evolutionary processes. Interestingly, the two instructors presented two differing opinions, each supported by a set of solid arguments. Their differing views piqued my interest. It shows that even among Muslim scholars, diversity of opinion exists with regards to human evolution and it is an accepted norm.

The second 'conflict' discussed attempted to search for an answer to the question: What does it mean to be human? With the advancement of artificial intelligence (A.I.) resembling humans from many cognitive aspects, what is our essential nature that makes human distinct? In Seminar 3, we discussed how Islam equates human consciousness more with the soul, while neuroscience reduces it to the brain; this is a result of two different thought frameworks. We also had fun engaging with a few thought experiments that demonstrate AI's limitation in replicating a human's religious or spiritual experiences.

Third, the question of transhumanism and its limit in Islam. Transhumanist practices include human enhancement, which aims to improve/augment the human body by altering it using medical and biotechnology. Examples include genetic modification, mind uploading, and other activities that may aspire to achieve extreme longevity or immortality. In Islam, bodily modification is permissible when it is therapeutic, or aims to treat diseases and restore function. Meanwhile, it is not permissible when the purpose is to enhance the human body beyond its normal function. In this seminar, we also had the change to discuss notions of death and immortality from the Islamic and secular perspectives while playing games and engaging in competitions.

The existence of extraterrestrial intelligent life (ET) - and what that means to human exceptionalism - was the fourth topic discussed. Scientists today are claiming a high probability of ET existence. Islam does not reject this possibility. In fact, the Quran confirms the existence of extraterrestrial creatures like jinns and angels. But if ET here refers to physical beings, this remains probabilistic. It is important to note that some Qur'anic verses and hadiths imply the potential existence of ET. What I liked most about this seminar was the framework presented by the instructors, which was a tool to help us categorize and rank the types of evidence and their level of certainty. Another critical point raised was the motivation behind the pursuit of ET, whether it is a matter worth the time and money if compared to other pressing issues.

The last conversation addressed the question of whether human life is pre-determined as opposed to them having free will. Scientific studies suggest that certain human behaviors are related to their genetic predisposition. This raises the question: are we controlled by our genes or are making free choices? And to what extent are humans accountable? Islam acknowledges that some parts of our life have been pre-destined, but some others are dependent on our action and choices. Since revelatory evidences are certain and scientific experiments with respect to behavior-gene relationships are yet to be further developed, I hold on to the Islamic belief of Qada and Qadr.

Among all the sessions, it was the first seminar on epistemology that transformed my perspective on Islam and bioscience most profoundly. I used to avoid answering such difficult questions at this intersection due to my lack of knowledge and fear that my answers would contradict my faith. But that is no longer the case. The epistemological framework presented - along with classification of knowledge sources and levels of evidence - harmoniously incorporates Islamic and bioscientific knowledge. From the framework, I learnt that the most vital component of any research is to define the problem first and subsequently develop systematic steps toward solving issue. The instructor helped me understand various new concepts and terminologies, without which, I would struggle to comprehend the rest of the seminars.

What sets this program apart from traditional classes was its interactive nature. The instructors were constantly encouraging us to ask questions and share our opinion from day 1. Didactic sessions were complemented by interesting case study discussions, model dialogues, games and competitions. Such a combination kept us engaged and prevented me from being a passive listener. I was able to actively ask questions, defend my opinion, build my confidence and courage to engage in conversations, and find answers to some of my long-held questions.

As a Muslim student aspiring to major in History, the seminar taught me a lot. The integration of bioscience and theology is still meaningful to me as a social science student, because the epistemic framework presented helped me to think more systematically when approaching a subject matter. But most importantly, the seminar had strengthened my faith and inspired me to become a competent and balanced intellectual, without abandoning my faith behind.



MUHAMMAD IQBAL HUSSAIN BIN NAWAZ HUSSAIN

International Islamic University Malaysia
Concentration: Medical Sciences

Upon completing the 'Exploring Bioscience and Islam' seminar series, my thinking process and approach to knowledge have greatly changed. The program was a catalyst for my current desire to explore issues and questions to which I have seeking answers for a long time. Prior to joining the sessions, my only way of seeking answers was by surfing the internet. Needless to say, the internet provides many sources of information lacking credibility.

"...the seminars have greatly influenced the way I think about my educational and professional journey. While my enthusiasm for medicine remains unchanged, I now view medical science not a separate entity, but one that is related to various aspects of bioethics and Islamic theology."

The seminar topic that fascinated me most was transhumanism, or this notion of augmenting the human body beyond their normal function. I found this subject a very important and interesting one, but it is also overlooked or understudied by Muslim scholars. In Islam, while scientists are supposed to study and develop technologies beneficial to human life, they need to stay within the boundaries of the divine law. These boundaries exist not to inhibit techno-scientific advancement, but to guide mankind in distinguishing the right from the wrong, thus helping us make ethical decisions.

I benefitted immensely from this program in many ways. First, the seminar topics gave me insight into the latest and ongoing human scientific endeavors. These include the ambitious quest for immortality, the exploration of extraterrestrial existence, and investigations into the origin of life. Second, the introduction to epistemology in the first session opened my eyes to the different sources of knowledge and ways to judge truth claims. This was the foundation needed for me to venture into the rest of the seminars effectively. Third, the conversations prompted me to think about an issue in a more practical way, or in a more realistic manner. For instance, we were made aware of the motivation behind some so-called scientific endeavors. In many cases, business corporations are profit-driven, thus human benefit may not be the priority. On a brighter side, we concluded that a huge potential exists within today's youth. It is a collective responsibility to nurture future scientists and physicians who are dedicated to advancing knowledge while prioritizing human well-being over power and money.

Resolving conflicts between bioscience and Islam requires a thoughtful and balanced approach that considers both scientific evidence and Islamic teachings. The relationship between the two can be harmonious and complementary. Islam encourages seeking knowledge and exploring the natural world as a means to appreciate the wonders of God. For example, the human anatomy and physiological processes can be seen as a sign of wisdom and perfection of God's creative design. Reflecting upon these is a way to strengthen faith and enhance spiritual growth. Thus, bioscience is a tool to grasp and connect with the Divine. If a scientific discovery seems to contradict Islamic beliefs, consulting scholars with expertise in both disciplines can help resolve these perceived tensions and foster a more comprehensive understanding of the science-Islam relationship.

On a final note, the seminars have greatly influenced the way I think about my educational and professional journey. While my enthusiasm for medicine remains unchanged, I now view medical science as not a separate entity, but one that is related to various aspects of bioethics and Islamic theology. This shift in view allows me to perceive knowledge as integrated, not fragmented. Most importantly, the ability to connect these two bodies of knowledge gives me a greater sense of balance and motivates me to share this understanding with others.





MUHAMMAD SHAH DANIEL BIN SHAFIE

International Islamic University Malaysia Concentration: Human Science in English Language and Literature

Amidst the constellations of knowledge, there exists a captivating constellation where the stars of science and the galaxies of faith converge in a celestial dance. Imagine a seminar that unraveled this cosmic choreography, inviting curious minds to decode the intricate language that harmonizes science and Islam. Picture a journey that treads the delicate tightrope between knowledge and belief, challenging preconceptions and illuminating uncharted realms. This is not just a seminar; it is an odyssey of thought, a symphony of ideas, and a bridge across the chasm of understanding. Step into a realm where historical wisdom meets modern discovery, where conflicts dissolve into harmony, and where the quest for truth transcends boundaries. Welcome to the realm of "Harmonizing Horizons: Navigating Science and Islam in a Complex World." Embark on a journey that promises not only enlightenment but a transformation of perspectives, as we dive deep into the heart of a discourse that defines our past, shapes our present, and guides our future.

The "Exploring Bioscience and Islam" seminar series that I attended was a thought-provoking and enlightening experience. This event aimed to enhance participants' awareness and ability to navigate the intricate relationship between bioscience and Islamic theology. Throughout the program, we explored the historical contributions of Islamic scholars to science, discussed contemporary conflicts between religion (specifically Islam) and science, explored ways to manage the perceived tensions at this intersection. The insights gained from this seminar have been transformative, impacting not only my intellectual understanding but also my values and professional journey.

"The moral values gleaned from the seminar have deeply impacted my life in both personal and professional realms. I have learned the significance of open-mindedness, humility, and intellectual curiosity."

There are conflicts between Islam and Science. Historically, Islamic civilization has made remarkable contributions to various fields of science, such as astronomy, mathematics, medicine, and optics. However, with today's techno-scientific advancements, tensions exist between certain interpretations of Islamic theology and some scientific findings. These conflicts primarily arise in areas that touch on human origin, evolution, reproductive technologies, free will, and medical ethics. For instance, with respect to the subject of human evolution, some religious interpretations including those in Islam, base their argument on a literal narrative of Adam's creation. This may conflict with the prevailing scientific understanding of human origins through the process of evolution. This discrepancy has led to debates and misunderstandings between religious scholars and scientific communities.

The seminar on "Science and Islam" has been an eye-opening experience, allowing me to navigate the complex relationship between bioscience and Islamic theology. Through exploring historical contributions and contemporary conflicts, I have come to appreciate the value of embracing multiple approaches to resolve tensions between religion and science.

By incorporating empirical, rational, and revelatory approaches, the seminar emphasized the importance of harmonizing religious beliefs with scientific discoveries while respecting the unique domains of each. This holistic understanding enables individuals to maintain their faith while engaging with the advancements of modern science.



The moral values gleaned from the seminar have deeply impacted my life in both personal and professional realms. I have learned the significance of open-mindedness, humility, and intellectual curiosity. Embracing these values fosters an environment of dialogue and collaboration between diverse perspectives, allowing us to collectively address the complex challenges of our time.

In my professional journey, I aim to apply the insights gained from this seminar to bridge the gap between science and religious communities. As a budding researcher, I understand the significance of responsible scientific exploration and how it can complement and enrich religious perspectives. By nurturing an inclusive and respectful discourse, I aspire to contribute to a society where science and faith are seen as complementary forces that can promote human well-being and advance knowledge.

In conclusion, the "Exploring Bioscience and Islam" seminar series has been a transformative experience that has deepened my understanding of the relationship between science and religion. Through understanding the different types of knowledge sources and evidence, I have learned that resolving conflicts requires not only intellectual flexibility but also a profound commitment to ethical values. By promoting integration and dialogue, we can create a world where science and religion converge in harmony, enriching our collective pursuit of truth.



MUHAMMAD SHAH IKMAL BIN JUNAIDI

International Islamic University Malaysia Concentration: Nursing

Modern science today tends to reject the unseen. Since religion upholds the supernatural and accepts what it beyond the human physical senses, one might claim that this is the foundation of the antagonism between religion and science. Historically however, modern science seems to have departed from 'pre-modern' science. "Gravity must be caused by an Agent acting consistently according to certain laws," wrote Isaac Newton. Similarly, Robert Briffault proposed that 'science' as we know it today was produced and used by individuals who followed the Qur'an during the Islamic Golden Era. These two examples demonstrate that science is not separate from the metaphysical. Many western philosophers have contributed further to the science-religion discordance, but it is important for faith communities - especially Muslims - to view this issue critically and understand the root of this 'conflict.'

The 'Exploring Bioscience and Islam' seminar series aimed to build students' conceptual literacy at the intersection of bioscience and theology. This bridge is crucial since Muslims view their Islamic belief as one and integrated, covering all life aspects. In the first seminar, I was fascinated with a story of how a Muslim scientist claimed that he 'leaves Islam at the door' when he enters his lab, due to his view that his Islamic belief should not interfere with his scientific endeavor. The lesson struck me; if one has the right understanding of science and religion, one can always carry his faith and religious identity wherever he/she is. Such a separation between belief and scientific practices is not necessary. The story changed my perspectives on the relationship between Islam and science.

"Previously, my view was that Bioscience and Islam are incompatible and must be separated...My approach was typically to align with religion and disregard scientific evidence...This program emphasized the importance of adopting a middle ground..."

The seminar series have altered the way I think about Islam and science, and my approach to perceived tensions between the two. Previously, my view was that Bioscience and Islam are incompatible and must be separated. This was because occasionally, revelatory claims seem to clash with what scientific findings have to say. My approach was typically to align with religion and disregard scientific evidence. I was not aware that this way of thinking was too simplistic, even undesirable from the Islamic standpoint. This program emphasized the importance of adopting a middle ground between two extremes and guided us to a more balanced and holistic understanding of Islam and science. In addition, religious (Islamic) perspectives can be incorporated into science so that scientific practices can be more ethical.

There were several unique features of the sessions held during the seminars. First, they taught me critical thinking skills; I was equipped with the tool and cognitive skills to understand selected points of tension between Islam and bioscience, and find ways to manage them. Second, the blending of elements of bioscience and theology was novel, and not found in high school curriculum. Third, I was provided with hand-outs and printed materials which were specifically tailored to each discussion. These resources were extremely helpful in sustaining my engagement and comprehension of the topics. Weeks after the seminars ended, as I routinely surfed the social media, I found myself more interested in science-religion posts, and that I was able to follow the discussions more easily. For instance, on Twitter there are ongoing discussions on how some scientific findings contradict Islamic teachings. But I now feel it easier to critically analyze the issues at hand and distinguish between what can and cannot be accepted.

At a personal level, the knowledge I gained has boosted my confidence and interest in philosophy. In the past, I was an avid reader of philosophy and science. However, at some point I stopped reading books on western philosophy as I feared I would be negatively influenced and misguided. Now, I can reignite that interest and start reading again, as I have the tool and skills to navigate difficult questions or issues that may conflict with Islamic teachings. I aspire to be a nurse in the future, so integration of scientific/medical practice with my religious belief is exactly what I need as it will allow me to deliver my professional duties more effectively.

To summarize my thoughts, the seminars have furnished an exceptional insight on how bioscience and Islamic theology interact. The biggest change I experienced was the shift in my thought process; I am now convinced that the two realms are compatible, and that managing apparent 'conflicts' is not impossible. It requires a systematic understanding and application of the Islamic epistemic framework.





MUHAMMAD YUSRI BIN MOHD AZMI

International Islamic University Malaysia

Concentration: Islamic Revealed Knowledge

In the intricate tapestry of human existence, the realms of science and faith are perpetually interwoven, each thread influencing the other in profound and intricate ways. I participated in the 'Exploring Bioscience and Islam' seminar series as a theology student, embarking on a unique journey of exploration that transcends the boundaries of disciplines and delving into the confluence of bioscience and Islam. This fusion, where the empirical and the spiritual coalesce, beckons us to contemplate not only the scientific strides humanity has achieved but also the theological implications that arise. It also resonates with a question that has echoed through the ages: How do the revelations of science harmonize with the revelations of the divine?

"...the knowledge I acquired from this program has widened my intellectual and educational horizon. I can now see that theology can be studied and expanded in a creative manner, interfacing with other subjects including bioscience."

Although I gained tremendous insight from all the seminars, I found the first one to be the most impactful. It shifted my view about Islam and bioscience. Epistemology is the study of knowledge. It asks questions about what knowledge is, how we can acquire knowledge, and what the limits of knowledge are. We discussed two types of epistemologies: naturalist and Islamic. The naturalist epistemology asserts that knowledge is acquired through observation and experimentation. The Islamic epistemology on the other hand, upholds that knowledge can be acquired through revelation, reason and human empirical activities. It does not restrict knowledge acquisition to the human senses. There are similarities between natural and Islamic epistemologies; both emphasize reason. However, the difference lies in natural epistemology's rejection of revelation as a source of knowledge.

Another session I enjoyed was Seminar 5, which focused on the questions of free will and determinism. Determinism refers to the idea that all events in human life are pre-determined, therefore humans do not really have the capacity to make their own choices or act according to their wishes. This complex issue has been debated by philosophers and theologians for centuries. In Islam, there is no one simple, definitive answer to the question of determinism. Verses in the Quran seem to suggest that some life events are divinely ordained (eg: birth, death, etc) but in some other aspects of life, human do possess free will. The notion of accountability in Islam corroborates this. In bioscience, the concept of determinism is also complex. There is a growing body of evidence that suggests our genes play a significant role in determining our behavioral tendencies. However, this does not mean they are the only/sole factor that influences human behavior. Our environment, our experiences, and our choices also play a role. So, what does this mean for the relationship between Islam and bioscience?

It means that we need to be careful about how we interpret existing evidence, and we should not assume that our genes influence our behaviour in a deterministic way. In addition, some of these studies imply associations or correlations, rather than causal relationships. Other than that, we need to be mindful of the ethical implications of such scientific findings on societal life and human relationships.

As a Muslim student with a deep passion for science, I gained a lot from this learning experience. First, I have always been fascinated with issues at the intersection of science and theology, and the seminars have broadened my perspectives and understanding of both fields. Having adopted a more holistic view of the world, I now wish to play a role in bringing these two fields together to solve some of the most pressing problems facing humanity. Second, the seminar instructors helped me develop a set of critical thinking skills. They exposed me to different perspectives on selected issues and challenged me to think about the ethical and moral implications of scientific research. I found these cognitive exercises extremely beneficial as they don't only prepare me to be a competent theologian, but a more informed and engaged citizen. Third, the program was a rewarding experience because I had the opportunity to learn from leading experts in the field and to network with colleagues with similar interests at this intersection.

Being in the Islamic studies/theology track, the knowledge I acquired from this program has widened my intellectual and educational horizons. I can now see that theology can be studied and expanded in a creative manner, interfacing with other subjects including bioscience. This is crucial because I aspire to be a content creator and use existing platforms to teach Malaysian society how Islam and Bioscience can interact. It was a privilege to have been part of this initiative; every component was specifically tailored to our needs and carefully planned.

In conclusion, the unique fusion of Islam and bioscience shows how well 'ancient wisdom' and modern progress can go together. This mix tells us that faith and reason can match up, while reminding us to think carefully about modern discoveries and what our beliefs say about them. As the bioscience-theology dynamics evolve, we may continue to keep changing the way we understand things. But in the end, this tells us that everything is ultimately connected.





MULHEM HAMADEH

Universal School - Bridgeview, Illinois

Participating in the 'Exploring Bioscience and Islam' seminar series was an enriching learning experience. Among the many topics I learnt, the questions of extra-terrestrial life and human exceptionalism were the most intriguing. During the last seminar, we had a very thought-provoking conversation about the possibility of extraterrestrial life and its relationship to Islamic beliefs. I found this topic fascinating because it combined science and religion in a way I had not considered before.

The speakers began by recognizing that the Quran does not mention extraterrestrial life explicitly. Nevertheless, there are passages referring to God's creation of other worlds and the vastness of the universe, implying that there may be life beyond earth. This challenged my prior standpoint that Islam and science are incompatible. How would the discovery of extraterrestrial life impact on Islamic beliefs, then? According to the Quran, God is the creator of all life, so the existence of life on other planets would not pose a threat to this fundamental belief. It could, however, raise questions about the uniqueness of humans and our place in the universe.



The next interesting conversation was on free will vs. determinism. I learnt that Islam supports the notion of free will, and that humans have the capacity to make their own decisions. This belief is fundamental to the Islamic doctrine and plays a crucial role in how Muslims view their relationships with God. Free will is not necessarily in contrast with determinism because while some aspects of the human life are beyond our control

(eg: death), it does not mean humans cannot act on their will in other aspects of life. God's knowledge over all life events does not mean He imposes our actions and decisions on us. Again, this discussion had contested my long-held belief. I admired how the instructors were able to reconcile these seemingly contradictory ideas and demonstrate that they can coexist in a meaningful way.

"I admired how the instructors were able to reconcile these seemingly contradictory ideas and demonstrate that they can coexist in a meaningful way. "

One key takeaway of the program was that when encountering complex issues at the intersection of science and religion, it is critical that we consider the different types and sources of evidence. For instance, questions of extraterrestrial life and free will require us to consider empirical, rational and revelatory evidence. Relying only on empirical evidence - while dismissing revelation - may handicap our ability to grasp the issue from different sides. This holistic approach can facilitate more reflective conversations that bridge the gap between science and religion. Perhaps, approaching complex issues with an open and inquisitive mindset was a major theme that emerged from the seminars.

In a nutshell, participating in the Islamic bioscience seminar enriched my understanding of how Islam and science can intersect in significant ways. The discussions on extraterrestrial life and free will challenged my preconceived notions about these intricate topics and broadened my understanding of the relationship between science and religion. It has also increased my appreciation for the significance of investigating the intersection of religion and science, in terms of my professional development.

In essence, the 'Exploring Bioscience and Islam' seminars enlightened me intellectually and spiritually. They have, in a very subtle way, challenged my prior beliefs regarding the relationship between science and religion. Indeed, the greatest benefit for me was to have these old presumptions re-visited and my cognitive horizon stretched.



NADYA FARISHA BINTI RADHILUFTI

International Islamic University Malaysia

Concentration: Human Sciences in English Language
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To be honest, I have never given much thought to the 'Big Questions' about the human being. Or perhaps, the questions have come to my mind in a different form in the past, but I have always conformed to what most people around me believe or say. For instance, that humans are descendants of Prophet Adam and aliens may or may not exist. Looking back at my childhood years, my mother and I used to have late night talks when all my siblings were asleep, about almost anything under the sun. During those peaceful nights, we wondered about everything our mind could imagine. For instance, I asked about the practice of eating fruits before meals, and why science encourages regular fasting. Regardless of the topic, we always somehow ended our little chit-chat with finding connection to the Divine. Mom often reminded me that whatever ritual or practice Islam orders to do is for our own benefit. Because of this, I grew up with a worldview that science is not alien to religious beliefs. They are related and are in constant interaction.

"I am now convinced that Islam and bioscience are not two separate entities at odds with each other. This program was a blessing for young minds, helping them to grow and thrive, while sparking interest for the two fields of knowledge. One of the 'pearls of wisdom' I would always hold dear to, was the advice given to us that when 'practicing science, you do not have to leave your religion at the door.' "

Throughout the program, I was mostly intrigued by the presentation on transhumanism, as I had not come across the term. Seated at a round table with a cup of hot coffee to keep me energized, I learned that one of the key ideas of transhumanism is that human beings are an incomplete or unfinished product of evolution. This may seem strange to Muslims who mostly do not adhere to the notion of human evolution. The goal of transhumanists therefore - among others - is to enhance the human beings by overcoming their frailty and bodily limitations through the usage of biotechnology. Of equal importance, this 'enhancement' is also needed to strengthen the human body which is often prone to diseases to 'fight' ageing. Examples of human enhancement include mind uploading and having robotic eye implants or super-strong metal arms. These are thought to augment the human body, with the eventual hope of making humans stronger and more brilliant, extending their life span, and perhaps, avoiding death altogether.

On the other hand, revelations propose a different view. The Qur'an says that humans have been created in 'best of forms' and that we should not 'alter God's creation' except

in very specific circumstances where needs arise. These apparently clash with the ambitious pursuit of transhumanism as described earlier; how do we reconcile this? Subsequent conversations on Islam's worldview of the afterlife and purpose of creation, and the interpretation of the Quranic phrase 'best of forms' helped me grasp the issue better.

One of the case studies we had was titled 'Six Fingers!' It was a story about a child born with polydactyly and his mother wanting to remove the extra digit due to this physical 'abnormality'. The seminar instructor mentioned something that struck me and immediately challenged my prior view to science-religion relationships. "Our best shape is defined by our familiarity. If we are familiar to it, we say that it is in the best shape, and if we are not familiar to it, then we say that it is not in the best shape," said Dr Aasim. Those words got me thinking about how we habitually conclude something based on the norms and our subjective experiences; what we see, hear and engage with, each day. So 'normality' and 'abnormality' are relative terms, and this understanding has a huge implication on how humans react to a situation.

That important statement also led me to think of how and where the boundaries should be drawn, to ensure that our practices remain ethical. For Muslims, this is critical as Islam attempts to strike a delicate balance between benefiting from science and technology, and not going astray (being excessive). The case study exercise and the Seminar 4 lecture helped me see the complexity of human diseases, and more importantly, how 'diseases' are perceived. They also made realize that most contradicting claims or conflicts in this world are due to people viewing a particular subject from different angles and perspectives. Thus, by acknowledging the diversity of views and understanding where each is coming from, we can figure out the best approach to managing a dispute.

The 'Exploring Bioscience and Islam' seminar series was a breath a fresh air. It has motivated me and my peers mind to pursue more knowledge, especially at the intersection of Islam and bioscience. The program left a profound impact on my understanding of myself, and I am certain that it will leave an indelible mark on my professional journey in the future. Most importantly, the tools and skills to evaluate truth claims that we learnt are a critical reasoning and decision-making aid that I hope to utilize when encountering a 'conflict'.

To have crossed the paths of these great scholars and engaged with this unforgettable learning experience, I am now convinced that Islam and bioscience are not two separate entities at odds with each other. This program was a blessing for young minds, helping them to grow and thrive, while sparking interest for the two fields of knowledge. One of the 'pearls of wisdom' I would always hold dear to, was the advice given to us that when 'practicing science, you do not have to leave your religion at the door.'



NAJWAN HAKIMI BIN AHMAD JORAIMEE

International Islamic University Malaysia Concentration: Medical Sciences

The Allegory of the Cave or Plato's Allegory is one of the most well-known pieces of Greek philosophy. Here, Plato describes a group of men who were chained to a wall inside a cave and were only able to set their eyes on a blank wall in front of them. Several distinguishable moving shadows came to their view, while their ears could catch sounds akin to a conversation. In an attempt to find meaning, these men began to give names and create stories based on the shadows. However, unbeknown to them, these shadows were actually puppets held by puppeteers. For the prisoners, this was their reality. They were not able to fathom anything beyond that, because it was the only form of truth they ever knew.

Socrates, Plato's mentor, described the prisoners' release. They were then able to see the fire that casted the shadows they had long seen. The light from the fire was so bright that they denied the existence of such brightness, inadvertently turning their faces to the wall they were accustomed to. But the journey did not end there. Due to their persistent curiosity, they stepped outside the cave and got astonished. They saw the shadows and reflections of themselves and their surroundings. They saw the sky, the stars, and the sun. Their vision become clearer, and they became wiser. They were no longer bound to the illusion inside the cave.

The lessons on epistemology during the 'Exploring Bioscience and Islam' seminars reminded me of this tale. In my personal quest for truth, I was confronted by my own ignorance and challenged to find the connection between science and religion. I had long observed that the progressive field of science does not encompass any religious claims or values. Conversely, Islamic theology rarely mentions scientific proof except if it directly supports revelatory knowledge. These two realms had a longstanding history of irreconcilable disputes, leading me to believe that integration is difficult.

However, the learning experience I had in this program has paved the way for me to approach this 'conflict' in a more balanced and creative way while adopting a new perspective in my personal and educational journey. I have come to realize that modern science is an ever-evolving field, and it often relies on assumptions or probabilistic calculations; not all scientific findings can always be verified. Similar to the prisoners outside the cave, I no longer perceive the way to obtain knowledge or truth as strictly limited to the naturalistic or reductive approach. Rather, the path to knowledge is a holistic endeavor that combines the disciplines of natural sciences and the fundamentals of theology. In retrospect, the world of science is built on solid groundwork, counting on empirical evidence that can be tested over and over again using systematic methods. Despite that, science does not have the answer to everything.

For instance, we can look at the debates surrounding the issue of human evolution. Scientists can only postulate, but not accurately verify, what is there beyond our past through the study of paleontology, homology, and genetics. This is problematic when we want to prove the origin of humans - do we share a common ancestor with other an-

imals or living beings on this planet, or were humans created independently and uniquely? Similarly, the existing scientific evidence to date can only assume that extraterrestrial life exists, but whether that is verifiable or accurate is still a long way to go.

"The days I spent in this program left a profound impact on my mind. The lessons I learnt have caused me to be more inquisitive of the world around me, and to always question what I am presented with. They also taught me to remain humble about my knowledge when engaging with others."

As Muslims, we must navigate this complex intersection carefully and be aware of what revelations have described to us, and why they say so. It is critical for us to distinguish the different levels of evidence certainty, as the probabilistic nature of many scientific experiments or findings. In the Qur'an Chapter 82 Verse 7, Allah describes the human as having been created in the best physical form; the verse also implies that we are distinct in essence from other beings, including the jinns and angels. This clear statement in the Quran forms the foundation of our belief and informs our approach in interpreting scientific claims related to biological evolution.

This is not to say that science should be rejected entirely and ignorantly. On the contrary, Muslims should acknowledge that the contribution and advantages of modern science, while knowing its limitations. Criticism is a tradition in science and the most rigorous scientific community is not infallible. Martin Luther King Jr once said, "Science investigates; religion interprets. Science gives man knowledge, which is power; religion gives man wisdom, which is control. Science deals mainly with facts; religion deals mainly with values. The two are not rivals." It is thus critical that Muslim students who aspire to be future physicians, scientists or theologians foster an integrated perspective that merges the study of science and theology, as the former will not be complete without the latter.

I had thoroughly enjoyed the diversity of topics held in the seminars, but my favorite session was the question of human consciousness and its relation to the soul. Consciousness is a broad and complex discussion topic. Given my long-held interest in neuroscience, the conversations around the human soul and consciousness - presented from both the secular and Islamic views - fascinated me. The instructors were enthusiastic and made real effort to explain concepts, terms and potential conflicts, which have greatly improved my understanding of consciousness and the human soul beyond what I conventionally come across.

The days I spent in this program left a profound impact on my mind. The lessons I learnt have caused me to be more inquisitive of the world around me, and to always question what I am presented with. They also taught me to remain humble about my knowledge when engaging with others. In addition, the seminars have sparked my interest in Islamic methodology and Islamic laws and reignited my passion for neurobiology and neuro medicine. The program was a lifetime opportunity from which I greatly benefited!

In my opinion, several unique features of this program have contributed to its effectiveness. First, the seminar titles were relevant to each other - arranged in a logical flow - and were delivered in a very engaging and thought-provoking manner. Second, the information presented was not in-depth, but this was appropriate for an audience coming from diverse backgrounds. Third, the group activities were not arduous as to make us feel overwhelmed. Instead, they were carefully designed to challenge us to apply the epistemic framework to the questions in subsequent seminars and guide us to find solutions by thinking unconventionally.



Fourth, besides the outstanding seminar content, the instructors always encouraged us to ask questions and share our thoughts without the fear of judgment. This has greatly improved my communication skills and confidence.

In today's modern world, the light of guidance is slowly diminishing, and the existence of God is being questioned. Friedrich Nietzsche, a 19th-century German philosopher, famously wrote, "God is dead. God remains dead. And we have killed him." Nietzsche was not suggesting that God is capable of dying, rather he was proposing that God has ceased to exist in the hearts and minds of people. Nietzsche upheld rationalism and science, asserting that everything in the universe is governed solely by the physical laws of nature while criticizing the long-established standards of morals defined by religion.

As Muslims, we should be able to ask critical questions, and not fall into this trap of modernism. Instead, we need to delve deeper into the fundamentals of theology and philosophical underpinnings of science so that we can make comparisons and appreciate the overlaps and differences between bioscience and Islam. In my final words, the essence of Islamic teachings does not dismiss other fields of knowledge but complements and enriches them. Without an open mind in this subject matter, we are prisoners of the aforementioned cave, that shun away from seeking the light of truth.



NOOR AQUEEL

MCC Academy - Skokie, IL

I was introduced to this program because of my interest in medicine. My teacher told me that I would learn topics applicable to my professional life, and those topics lie at the intersection between bioscience and Islam. Furthermore, the seminars brought together some of the best theologians, scientists, and educators in the field! At first, I was not convinced because of my long-held view that science and religion are two separate entities. I was afraid to delve into this contentious area as I did not want to compromise my religious beliefs. As a Muslim student, I had often shied away from those difficult conversations as I felt like I did not have the answers to defend my religion. But things took a different turn with the perspectives I gained from this program. My view of science and Islam changed profoundly. By the end of the seminars, I was convinced to pursue a career that centers around the two knowledge domains.

A very unique aspect of the seminars was that they brought together a group of instructors who are experts and experienced in the science-religion interface. This was particularly inspirational. I had never actually heard of people being scholars in both bioscience and Islam. With backgrounds in science, medicine, theology and education, the scholars represented a diversity needed for delivering this important initiative. Although the gist of the program was to show us that the two bodies of knowledge can be integrated and viewed as complementary, seeing real-life examples and role models who have devoted their lives to this area made a huge difference. I came to realize that I do not have to choose between my career and religion. In fact, my religious beliefs can strengthen my career and professional identity.

"I came to realize that I do not have to choose between my career and religion. In fact, my religious beliefs can strengthen my career and professional identity."

Among all the seminar topics, the one I enjoyed most was the discussion on free will and genetic determinism. Prior to this program, the concept of free will and predestination had always bothered me. I could not make sense of how two opposing ideas could ever coexist. These seemingly opposing notions were explained to me through confusing analogies, and at times I felt like I just had to accept it, without much questioning and understanding. As a result, it never stayed with me firmly. The conversations and explanation I heard in Seminar 5 was a life changer for me because of the peace I have in my heart now. I understand now how the two can coexist, with clarity.

I learned that there is an area of human life that we can make choices about, while at the same time, there are aspects that have been predetermined. For example, our birthplace is not something we can choose. Other predetermined elements include the function of our body systems, our race, and when or where we will die. Outside of those predetermined aspects, humans have the ability to choose within the power of Allah. We are held accountable only in matters in which we have free choice, if we are mature and mentally sound.

With regard to predeterminism, many scientists defend partial determinism, which includes the notion of human traits and behavioural tendencies being dependent on genes and the relationship between those genes and the environment. This supports the Islamic viewpoint that predetermination and free will can coexist. It shows that we are not determined purely by genetic makeup but also other factors. Moreover, Islam describes the by human capacity to obtain divine guidance. The existence of divine guidance - which can change an individual life path - rules out that mankind is strictly predetermined. This way, the 'conflict' between predestination and free will is reconciled. This solution is one that aligns with Islam and science without having to lessen the value of either one. I had been searching for clarity on this matter, and this seminar gave me just that!

Upon completing the program, I was convinced to pursue a career at this intersection. I had wanted to be a doctor, and now I also wish to take an extra step by bringing theological perspectives into my future career. The seminar series particularly sparked my interest in Islamic theology and bioethics. In the future, I plan to study medicine and Islamic sciences, so that I can assist patients with religious commitments in seeking options that are value concordant. Other than that, it is important for me to inform others about what I have learnt; this transfer of knowledge and awareness will open doors for more people to engage with, and contribute to, discussions at the bioscience-Islam intersection.

Lessons learnt from the 'Exploring Bioscience and Islam' seminar series will always remain with me. I am grateful to have been in the company of inspiring scholars who have proven that having successful careers at this intersection is not impossible. In the short recruitment video that I watched earlier, we were told that even if we did not learn anything, we would at least leave with fun alien stickers. True, I got the stickers! But I also left with a lot more than just that. I left the program with fresh insights, renewed aspirations, and a deep understanding of various issues that I never thought I could have. I am overjoyed that my Muslim identity and passion for science can be utilized together in the future. Thanks to this program, I plan to do just that!



NURUL AINAA AFIFAH BINTI MOHD SABRI

International Islamic University Malaysia Concentration: Medical Sciences

My learning experience with the 'Exploring Bioscience and Islam' seminar series has changed the way I look at the relationship between science and Islam. Before the program, I was always told that Islam is holistic and interconnected with science. However, the academic syllabus at school never really demonstrated this so-called integration. In fact, the curriculum separated religious studies from science. I knew the science-religion interface exists as a contentious field, but I was never taught of how to link the two disciplines. The four-day seminars were an eye opener and a game changer, as they completely shifted my view and understanding of science and religion. I was deeply humbled to have learnt the new insight and skills, and for the opportunity to engage with lively discussions with a group of brilliant scholars from various countries.

"...the seminars largely changed my stance on the bioscience-Islam relationship, from two opposing realms to one that complements each other. They also made me more aware of the importance of medical ethics... I wish to further explore the intersection of Bioscience and Islam - it is a duty for me as a medical student..."

The topic that impacted my view most was epistemology or the study of knowledge. While Islamic epistemology categorizes judgement into rational, empirical and revelatory, humans are said to acquire knowledge through the following means: intellect, five senses, true reports and intuition. In contrast, the Naturalistic epistemology only accepts empirical judgement as the source of knowledge. Naturalism rejects any kind of metaphysical or supernatural elements in explaining worldly phenomena.

To resolve two conflicting propositions or truth claims, the instructor presented to us the Islamic epistemic framework, which is a tool to help us judge and think about an apparent 'clash' in a systematic way. We were told to ponder upon the source of knowledge from which the proposition was coming, and how robust the evidence is - certain or probabilistic - to support that proposition. For instance, the question of extraterrestrial intelligent life (ETI) existence. Empirical judgment which is entirely based on scientific observation and mathematical calculations claim a high possibility of ETI existence. Equally, rational judgment asserts that it is logical and possible for ETI to exist given the vastness of the universe. Revelatory judgment on the other hand is based on the Qur'an and hadith; both hint at the possibility of ETI existence, though they do not explicitly confirm it. However, since none of these judgments could prove ETI existence definitively, we conclude that this phenomenon is probabilistic in both establishment

and meaning. In short, the fundamentals of epistemology in the first seminar shed light on we should judge a truth claim and prioritize one with a higher level of certainty.

The unique learning experience I had over those four days had a great impact on me, personally and academically. Firstly, it reminds me of my life purpose, which is to use this world as a means to achieve salvation in the afterlife. Whatever career I choose or however I decide to utilize my ability must be in line with Divine injunctions. Secondly, the program reminds me of the nature of human illness and healing; cure comes from neither the doctor nor the medicine, but it is ultimately by the power of Allah. Needless to say, humans should take the effort to seek cure. Thirdly, I learnt to adopt the right mindset and adab when it comes to knowledge. Not only that absolute knowledge resides with God, we need to use knowledge as a means to purify the soul (tazkiyatun nafs). True knowledge acquisition should eliminate arrogance, selfishness and greed. A good physician does not only possess good clinical skills, but he should embrace the best of characters and manners.



At the academic and professional level, the seminars had largely changed my stance on the bioscience-Islam relationship, from two opposing realms to one that complements each other. They also made me more aware of the importance of medical ethics. My peers and I now have the tool and skills to evaluate a problem in a more systematic manner. I wish to further explore the intersection of Bioscience and Islam- it is a duty for me as a medical student and future Muslim physician.



NUR SAFIAH BINTI SHAMSUDDIN

International Islamic University Malaysia

Concentration: Medical Sciences

They say, 'knowledge is power' and I cannot agree more! The 'Exploring Bioscience and Islam" seminar series was an absolute game-changer for me. The opportunity to converse with a group of globally renowned scholars over those four days had opened up a new world for me - a world of useful information, new insights, and viewpoints that I never knew. Who would have thought that spending such a short period of time in this program could have produced this profound impact?

The main goal of the seminars was to address fundamental questions about the human being which lie at the intersection of Bioscience and theology. These were six seminar topics, and each presented a question that appeared as a 'conflict' between bioscientific findings and Islamic teachings. The subject that captivated me most was human evolution. Evolution, as we know it, refers to the process through which life has gradually emerged on earth.

"In the past, I have heard of various scientific theories about evolution and the origin of life, but this program uniquely added spiritual and philosophical dimensions that I had not thought of.

There are three basic principles of biological evolution: deep time, common ancestry, and mechanisms which include random mutation and natural selection. The first principle, deep time, is all about understanding just how old the Earth is and how long life has been evolving. Imagine if you could count all the seconds that have passed since the Earth formed - it would be an incredibly large number. Scientists have discovered that the Earth is extremely old, approximately 4.6 billion years. This old age gives the idea that changes on Earth do not happen quickly but slowly and gradually. The great diversity of life that exists today is the result of this long, slow process which allowed tiny changes to build up over time.

The second principle, common ancestry, means that all living creatures on Earth are like one big family tree. Just like how we and our cousins share the same grandparents, all living beings are connected to each other through their ancestors. Scientists have found ample evidence to suggest that different species are related and share common ancestors a long time ago. This shows that life on Earth has evolved over time, and even though we may look different from each other, there are similarities in our genetic composition and physical structures.

The third principle, mechanisms, refers to how living things change and adapt over time. One is random mutations in which genetic changes occur when creatures produce their offspring. These changes can be small or big, and sometimes they lead to new traits that help organisms survive better in their environment. Another mechanism is natural selection where species with the best traits to survive and thrive will get to live and reproduce, outgrowing other types of weaker species. As time passes, the traits helpful for survival become more common in the population.

From the Islamic perspective, humankind is the descendant of Prophet Adam whose origin goes back to God, the Creator. In the Qur'an, many verses assert that Allah created the universe and everything in it, including human beings. In addition, the Qur'an describes the creation of Adam as a special and unique event; Adam was created from clay and was brought to life by the divine breath of God. This account of creation emphasizes the concept of tawheed (monotheism) and distinguishes humankind as being elevated above many other creations as they are endowed with intellect, free will and responsibilities.

The conflict between scientific perspectives and Islam on human origin arises from these differing views. Science relies on empirical evidence, observation, and experimentation, while religion relies on sacred texts and spiritual beliefs. Were Adam and Eve the first human beings created by God, or is all of mankind a product of biological evolution? In this regard, many Islamic scholars take a literal approach to the relevant texts in the Qur'an. According to this interpretation, Adam and Eve were the first human beings and they were created directly by God. In contrast, the scientific perspective which relies on evidence from fossil records, homology, and genetics uphold that random mutations and natural selection have contributed to humans' progressive development over millions of years.

Given these two conflicting standpoints, priority should be given to revelatory sources after understanding what they mean and what they refer to. In Chapter 95 (At-Tin) Verse 95, the Qur'an says: "Verily We have created man in the fairest symmetry". From this translation, we can say that humans are created in the best or the most balanced form (ahsan al-taqwim). It also seems to imply that humans did not evolve over time from another species and does not belong to the anthropology of Homo. Similar evidence exists in hadeeths, where Adam is described as the Father of humankind. It is critical to note however that Qur'anic verses do not explicitly negate the possibility of evolution of other living beings, like the animals.

I can confidently say that the seminar series has greatly influenced the direction of my educational and professional journey. The insights I gained from the discussions have sparked my interest to learn and consider research in this area. In the past, I have heard of various scientific theories about evolution and the origin of life, but this program uniquely added spiritual and philosophical dimensions that I had not thought of. I now feel encouraged to integrate knowledge from different perspectives to acquire a more holistic worldview. As a medical student, I will make an effort to pursue medicine while combining scientific knowledge and Islamic ethics. This valuable learning experience has indeed left me with more thirst for knowledge and intellectual exploration.



NUR SYARAH BINTI MOHAMED SHUHAIIDI

International Islamic University Malaysia Concentration: Medical Sciences

"Did humans exist in prehistoric times? What does that say about Adam being the first human on earth? If aliens do exist, does religious commitment and accountability apply to them too?" I was always a curious child back then. The adults around me would often struggle with my endless questions, yet I got the same answer again and again. They would say: "I don't know the answers and you shouldn't question these things". It was disappointing to say the least. Throughout my childhood and teenage years, I eventually understood that questioning what people normally do or believe is taboo. Gradually, I lost the courage to ask real and difficult questions, or to even think about them. Nevertheless, from time to time, I found myself searching for answers to the same, old question I used to ask by surfing the internet and watching YouTube videos.

When I heard about the 'Exploring Bioscience and Islam' seminar series, I felt a surge of excitement. It was like my unresolved childhood questions would eventually be answered! I browsed through the program agenda and found the seminar topics fascinating. Little did I realize that the seminars would exceed my expectations. During the event, I was eager and attentive. I found the levels of intellect and enthusiasm of the speakers extraordinary, the discussions highly engaging and the group activities extremely fun.

" This intellectual and spiritual journey has left me with a sense of responsibility to go far in my education and explore the intersection of bioscience and Islam."

Among the various topics presented, what attracted me most was the question of extraterrestrial intelligence (ETI) and life's existence in this universe. Today, the notion of alien existence frequently appears in popular culture like films, music, and other areas in the entertainment industry. Scientific evidence on the other hand is mixed. While many scientists believe ETI exists, there are also theories denying such a possibility. For instance, a theory called the "Rare Earth Hypothesis" claims that the origin of life requires a near-impossible combination of events and circumstances. Therefore, complex extraterrestrial life is an unlikely phenomenon and is probably uncommon over the entire cosmos.

From the Islamic perspective, we cannot disregard the possibility of ETI existence because there are verses in the Quran claiming that other forms of creation do in fact,

exist. In the very first Chapter (Al-Fatihah), the second verse reads: “All praise is for Allah — Lord of All Worlds”. The plural form of world here has been argued to indicate the creation and existence of more than just one planet, one universe, or one dimension of life. Many scholars interpreted the word a’alameen (plural of the world) as a reference to different types of species and creations like human beings, animals, jinns, angels, etc. But in essence, God is implying that we are not alone in this world. Hence, Islam does not negate the existence of ETI nor explicitly confirm it.



Among the greatest benefits of this program was acquisition of new and useful knowledge. It gives me peace of mind to know that it's okay to ask difficult and out-of-the-box questions with the intention of seeking knowledge and truth. In addition, I made many new friends, exchanged ideas with them during group activities and improved my communication skills. I had especially enjoyed the games and Kahoot! Lessons gained from the conversations over those days motivated me to work harder, update my scientific knowledge, and not neglect Islamic studies. If there are multiple perspectives on an issue, we are required to understand the similarities and differences, but focus on commonalities and address the differences in an open-minded and a respectful manner.

This intellectual and spiritual journey has left me with a sense of responsibility to go far in my education and explore the intersection of bioscience and Islam. As a future Muslim physician, I will honor my religious commitment and identity while practicing medicine by adhering to best practices and at the same time, respecting Islamic medical ethics. At the moment, I aspire to work toward publishing good quality academic work, and further explore contentious areas at this intersection. I am no longer scared to learn and ask questions, thanks for this program. If there is another similar learning opportunity in the future, I will be the first to grab it!



SARAH MOHD HAIRUL HASMADY

International Islamic University Malaysia Concentration: Economics

As an Economics student, I have not had a strong science background since high school, so I have to admit that I was quite nervous to sign up for this program. When the time came to answer the pre-seminar survey, I found myself confused and unaware of most of the terminologies used in the questionnaire. I could not help thinking: Is this really for me?

In the opening session, one of the scholars pointed out that the chairperson had mentioned 'Exploring Islam and Bioscience' instead of 'Exploring Bioscience and Islam,' which was the actual program name. Differences in word sequence, it seems, could mean different levels of importance attached to each term. This caught my attention. I began thinking of the interrelations between the two. Through Bioscience, we can explore Islam and through Islam, we can explore Bioscience. This dynamic relationship was eloquently demonstrated throughout the seven seminars, whose sequence of topics was carefully arranged.

"..at the end of the seminars, I found myself confidently answering the post-seminar questions! It was a completely different experience compared to the baseline survey where I was unsure and confused. This proved that the lectures were highly effective because students who do not study science could also engage, understand and gain knowledge."

My familiarity with economics was challenged by a sudden exposure to new concepts and terminologies. I came to know what naturalism, epistemology, proposition and transhumanism mean, among many other terms. I also learnt how knowledge sources and judgments are classified, along with methods to determine levels of certainty in our judgment. These were all alien concepts to me. But at the end of the seminars, I found myself confidently answering the post-seminar questions! It was a completely different experience compared to the baseline survey where I was unsure and confused. This proved that the lectures were highly effective because students who do not study science could also engage, understand and gain knowledge.

In one of the last sessions, the instructor again caught my attention when he stated that the goal of the program was not to find conclusive answers to each and every question. But it is to build our literacy, awareness, interest and ability to appreciate conflicts and adopt the right approach to deal with them. In other words, it is okay not to have all the answers. Rather what we need is the right attitude toward knowledge and a constant motivation to pursue this life-long intellectual journey.

Among the many conflicts raised and discussed in the seminars, the most intriguing was perhaps the question of human origin. Revelation asserts that the father of humankind, Adam, was a special creation of God, thus negating the possibility of evolution. However, some Qur'anic verses hint at the existence of other species or 'pre-human' beings on Earth before Adam's creation. Modern science on the other hand widely upholds that human - like other living beings - are a product of biological evolution. This contradicts the narrative of creation mentioned in the Qur'an. Solving these two conflicting views requires a thorough understanding of the science of evolution and what is being claimed in scriptural texts. While revelatory sources (both the Qur'an and hadeeth) claim the story of creation, their stand with regards to other living beings (like animals) are not very explicit, suggesting a possibility of evolution of these species.

The next interesting subject was the nature of human beings. We were challenged to think about how to resolve the religious claim of human possessing souls and consciousness and the scientific claim that the world only consists of physical entities that can be measured or empirically proven. The instructors conducted several thought experiments which helped us think and contemplate over the issue creatively. I was especially drawn to a demonstration of how our religious/spiritual experiences could prove that certain feelings like pain, pleasure, happiness, sadness, humility, arrogance, gratitude and ingratitude are beyond our physical body. This constitutes rational evidence for the existence of soul through self-introspection. We may not be entirely sure where the soul resides, but we know it is there.



The seminar series had re-ignited my interest in topics related to anthropology, psychology, astronomy, history, and philosophy. It was inspiring to learn about the great works and views of important figures like Charles Darwin and Galileo Galilei, while reflecting on scriptural texts that help me make sense and find meaning in their scientific claims. Seeing and conversing with all the great scholars, I am now motivated to pursue more advanced degrees and emulate their steps. Thank you for giving me the opportunity to be part of this amazing journey!



SULAIMAN SYED

Dunlap High School - Peoria County, Illinois

The 'Exploring Bioscience and Islam' seminar series has equipped me with the essential knowledge and skills at the intersection between bioscience and theology. I was heavily inspired by the seminar contents and interactive discussions. The lessons I gained will be the foundation for my educational and career path in the future. Even though the program covered myriad topics, the issues I found most interesting were those related gene alteration, naturalism vs. reductionism, and transhumanism in the light of Islam.

"Conversations around contemporary medical issues and new scientific findings reiterated my belief in the importance of Muslim doctors or physicians not only being professionally competent but possess sufficient religious knowledge and ethical awareness."

Conversations around contemporary medical issues and new scientific findings reiterated my belief in the importance of Muslim doctors or physicians not only being professionally competent but also possessing sufficient religious knowledge and ethical awareness. For example, gene alteration can be seen as an outstanding breakthrough or a detriment to human authenticity, depending on your perspective and how the technology is used. In Seminar 5, we were introduced to the CRISPR technology which has the potential to be extremely beneficial while posing major ethical problems. CRISPR stands for 'Clustered Regularly Interspaced Short Palindromic Repeats'. It is a simple yet powerful tool for editing genomes. It enables researchers to easily alter DNA sequences and modify gene function.

This type of medical intervention is approached with extreme caution by Muslim scholars because it is a form of alteration of the human body, which is not permitted in general. Here comes the role of a Muslim physician or scientist whose knowledge ideally should traverse the domains of science and theology. Without their unique insight, many patients could potentially receive medical treatments that contradict their religious values, while others would refuse therapies which are permissible for fear of compromising their religious beliefs.

The next engaging discussion was on the concepts of naturalism and reductionism, and how they relate to, or depart from, the Islamic epistemology. In brief, naturalists believe only in empirical knowledge, dismissing what is beyond the human senses. In a similar vein, reductionists believe that the world only consists of physical objects which can be measured. Islamic epistemology, on the other hand, adds rational and revelatory dimensions to the

empirical element, in establishing knowledge. These differing ideologies were critical to me as a Muslim student and future physician, as they help me understand how truth claims are made, and where they come from. The program thus showed me the importance of having a theological perspective attached to scientific views.

When I was coming to the second seminar (on evolution) I knew that the discussions would attempt to establish a common ground between Islam and evolution - a conversation I was waiting for. At school, we are only exposed to Darwin's narrative of biological evolution without additional dimensions to complement it. The second seminar was eloquently delivered, with a clear explanation of where Muslims stand on the subject of evolution. Quoting numerous examples from the Quran and Hadeeth, the seminar instructor elaborated on the story of Adam's creation and the question of human uniqueness. Nevertheless, I found it astounding to learn about scientific evidence that shows how closely related we are to other species which scientists claim to originate from the same ancestors as humans.

Because of the ever-changing bio-medical technologies and human ideology, I will be on a constant journey to explore potential conflicts that may arise at the science-religion interface and learn the theological perspectives on these topics. As a future Muslim physician, I aim to help my patients obtain the best medical care that operates within the boundaries of their religious beliefs and values. In my path to becoming a physician, I aspire to balance my clinical competency with proficiency in Islamic knowledge.





WAN FAHMI IZZUDDIN BIN ZAINI

International Islamic University Malaysia

Concentration: Economics

The 'Exploring Bioscience and Islam' seminars held on 17-20 July 2023 have tremendously changed the way I think about science and Islam. While the fundamental questions about human beings and apparent 'conflicts' at the bioscience-Islam intersection were being addressed over the program, I found some of my long-held questions equally answered. More importantly, I learned science cannot stand alone without theological perspectives, and vice versa.

According to the Islamic epistemology, humans acquire knowledge through several means: intellect, physical senses, true reports and intuition. These means need to be supported by the human judgment, which can be classified into rational, empirical and revelatory. This understanding clarifies a lot of vagueness and ambiguity of conflicts in our daily pursuit of knowledge.

In the seminar modules, I observed that any conflicts between bioscience and Islam can benefit from scriptural sources and theological perspectives. Even though we might not obtain definitive answers to every question in revelatory texts, the methods to approach a problem has been laid out by earlier Muslim scholars and refined by contemporary Muslim intellectuals. This underscores the need for Muslim scientists to not ignore or dismiss what religion has to say about a subject matter. Majoring in economics, I could not help thinking of applying what I learn here to other pressing questions in the social science field such as politics and economy. Certainly, I would find a lot of treasure within the Qur'an and hadeeth too if I were to delve into 'conflicts' between modern economic theories and Islamic perspectives.

"As a student who is not majoring in biomedical sciences, I view this learning experience as an opportunity to widen my view and intellectual horizon so that my educational path could be more interdisciplinary...the seminars have greatly improved my critical thinking and ability to solve problems..."

The first big question was the human origin. Here, the seminar's title was 'Human Evolution and God's special creation'. We attempted to resolve two conflicting truth claims: one that asserts Adam as a creation of God and the father of humankind, and another that posits the existence of pre-human beings on earth before Adam, and that

humans are a product of evolution. Since revelatory sources explicitly narrate Adam's creation by God as a unique historical event, Muslims are more likely to accept this interpretation as conclusive. However, the Qur'an does not negate evolution in totality (eg: animals) nor does it deny the existence of other living beings on earth Adam. In fact, some Qur'anic passages hint at such a possibility.

The next discussion that I found fascinating was the subject of transhumanism and the notion of human enhancement. In this seminar, the instructor presented several scenarios to gauge how we conceptualize human diseases, and where theological perspectives stand. The conversation then turned to medical therapy and intervention, and the circumstances that allow or prohibit 'changes to the body'. To understand this issue better, we must differentiate between therapy and enhancement. Therapy aims to restore the normal function of our body, whereas enhancement generally attempts to augment bodily function beyond what is normal. For example, wearing spectacles in order to restore eyesight can be considered therapy. But if one decides to undergo plastic surgery and alter the original appearance of the body permanently without a clear medical need, that is enhancement. Muslim scholars are cautious about body enhancement procedures as they resemble 'changing the creation of God,' a practice that is condemned in the Qur'an.

Last but not least, the seminars provide us with an epistemic framework tool that can be utilized to approach a problem in a systematic manner. This tool consists of several steps; the first one is to identify the source of judgment upon which a truth claim is being made. It can be empirical, rational, or revelatory. When two claims are conflicting, we should ponder upon the nature of the conflict, their overlap and differences. Subsequently, we need to determine the level of certainty of the evidence that supports these claims, which could be conclusive (qat'i) or probabilistic (zanni). While revelatory evidence is generally regarded as conclusive, it is critical to explore the potential different interpretations that exist, and the status of hadeeth involved.

As a student who is not majoring in biomedical sciences, I view this learning experience as an opportunity to widen my view and intellectual horizon so that my educational path could be more interdisciplinary. Additionally, the seminars have greatly improved my critical thinking and ability to solve problems as they equip me with the skills to examine an issue from multiple perspectives and consider the validity of a judgment. Thinking of how many problems out there are yet to be solved, I now feel enthusiastic to pursue more learning. No matter what educational background one has, I believe we should all strive together and use our expertise to complement each other.



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and Medicine

INFOGRAPHICS

Disclaimer: The work presented by each student is reflective of their own thoughts, ideas and opinions. The infographics do not necessarily represent the views or opinions of the collaborators or organizers of the seminars.

Q: TO WHAT EXTENT ARE OUR ACTIONS FATED?



The Initiative on Islam and Medicine



FOUR GENERATIONS OF CRIMINALS

60 Family members locked up in prison

01

CHRISTMAS PRESENT?

When Bobby Bogle was 11 years old, he received a heavy metal wrench in a plain brown paper bag as his Christmas present.

He and his brothers then used it to break into a local grocery store to steal soda.



The Bogle family in the 1930s



03

LOVING & SUPPORTIVE FAMILY

A Bogle broke the law due to love and respect for their parents.

They did it to make them proud

Ashley Bogle: "I just figure that everybody in the family has the opportunity to make their own choices."

STOLE WHAT?

The Bogle clan Stole everything, from chickens and cows to lumber and metals.

During middle school, they stole 18-wheeler big-rig semis



02

Tracey Bogle: "If I'd been raised in a family of doctors, I probably be a doctor. But I was raised in my family of outlaws who hated the law."



ASHLEY BREAKS THE LEGACY

Graduated from college in 2016. Today, she's a single mother living alone and working as a medical- record technician at a hospital in suburban Oregon.

04

APPLICATION OF WHAT I HAVE LEARNED



- Criminal behaviors are not determined by genes.
- Criminal tendencies in this case can be attributed more to environmental and social factors.
- The Bogle clan normalized crimes in their family.
- This normalization causes them to view violation of laws and imprisonment as something acceptable and to be proud of.
- Ashley broke this family 'tradition' and decided that she could make her own choice and determine a different life path.

Scientific perspective

- Gene is a basic hereditary unit that is passed from parents to their offspring.
- We cannot choose the family we want to be part of. However, our behavior may disrupt our genes. For example, alcohol consumption and drug addiction.

Islamic perspective

- Humans are granted free will and the freedom to act Qada' and Qadr implies Divine knowledge, not His imposition on our choices
- We have to use our intellect and Divine guidance while making choices in life

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Source:

Spitznagel, E. (2018, October 6). This "loving" family raised four generations of criminals. New York Post.
<https://nypost.com/2018/10/06/this-loving-family-raised-four-generations-of-criminals/>



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DETERMINISM VS FREEWILL

Are we programmed or do we have free will?
To what extent are human beings' actions
fated ?

DETERMINISM



Pre-determinism refers to events that have been divinely ordained in advance. Certain aspects of our life are pre-determined, while in some other aspects we have the freedom to make choices. Muslims believe in the concept of *Qada'* and *Qadr*.

FREEWILL

Freewill means voluntary choices or decisions. Men are not accountable for events beyond their control. For whatever conscious decision or action taken, mankind will be held accountable. Reward or punishment follow accordingly. God provides His guidance (*hidayah*) and men can choose to obey or ignore.

CONCLUSION

There is an area of human life in which freewill operates. There are also aspects in our life that have been pre-determined. Humans have the ability to choose within the power of Allah. Human beings are held accountable only in matters in which they decide and act freely.

***Qada means God's knowledge of all the events in life, while qadr refers to bringing events according to his knowledge in its specific condition, time and place.



To What Extent Are Human Actions Fated ?

Freewill?

The ability to freely and consciously make choices that are not externally determined.

Determinism?

The belief that all events, including human actions, are ultimately determined by causes regarded as external to the will.



ISLAMIC PERSPECTIVE

Choices

Human are able to make choices from the options available to them. However, they are accountable for the choices they make. Actions will be rewarded or punished accordingly.

Human Nature

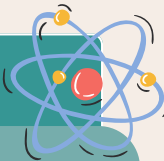
- Human life functions according to the laws of nature.
- Men are not accountable for the events and incidents that occur outside their will

Guidance (Hidayah)

The goal of Prophethood and revelation is to aid the mind to make the right choices that will lead to eternal salvation



SCIENCE PERSPECTIVE



- Genetic determinism
 - Partial determinism
 - genetic and environment
 - Full determinism
 - fatalism , essentialism
- The interactions between genes and behavior are complex and multifactorial.
- With regards to crime and same-sex attraction, the evidence of genetic determinism is inconclusive and uncertain.
- Given the uncertainty regarding the laws of nature, scientists debate whether humans really have free will.



SUMMARY

- Scriptural texts indicate that some aspects of life are predetermined and some are dependent on our choices.
- As a Muslim, we must always be conscious that we will be held accountable for all actions on the Day of Judgment.



The Initiative on Islam
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ARE HUMAN BEINGS UNIQUE IN THIS UNIVERSE?

WHAT IS EXTRATERRESTRIAL LIFE?

Life that may exist or may have existed in the universe outside the Earth

WHAT IS EXTRATERRESTRIAL INTELLIGENCE?

Hypothetical extraterrestrial life that is capable of thinking and doing purposeful activities.

WHAT DOES REVELATION SAY?

Allah is the One Who created seven heavens 'in layers', and of the Earth their like.....(65:12)

Interpretations..

1. Likeness in complexity : composed of various similar components; air, water, fire, etc.
2. Likeness in numbers: seven earths like seven skies
 - layered, connected, no separation between the earths
 - layered, disconnected, separated by the distance of what lies between the earth and the sky. Each earth contain different creatures of Allah

INTERPRETATIONS OF THE SEVEN EARTHS HADITH

1. The other earths are the abodes of the Jinn
2. Every earth has a different intelligent species.
3. The Realm of images ('alam al-mithal), an isthmus between the realms and the Unseen (ghayb) and the Seen (shahada)
4. The Prophets on these other earths are "warners" and not prophets in reality.
5. These earths & prophets are real, but the details are only known to Allah.

What do we know CONCLUSIVELY?

1. Existence of Intelligent creatures
 - men, jinns, angels
2. Multiplicity of Worlds and Realms
3. Vastness of the Universe
4. The specialness and finality of the Prophet Muhammad

What do we know PROBABILISTICALLY?

1. Broad metaphysical probability of the existence of extraterrestrial intelligent life.
2. It is theologically possible for extraterrestrial intelligent life to exist. Multiple earths and multiple prophets do not necessarily challenge the finality or specialness of Prophet Muhammad.

Do Aliens Exist?

There are ongoing debates surrounding the existence of Extraterrestrial Intelligent (ETI) life. This question that has been posed for hundreds of years, and is still being discussed by modern day scientists. Let's examine the Islamic and scientific viewpoints on this matter.

Scientific Reasoning

According to various empirical studies and mathematical calculations, it is possible that ETI exists.



Islamic Viewpoint

Texts in the Quran and hadeeth indicate the possibility of ETI existence, but there are debates between scholars because of different interpretations. Islam does not entirely confirm or negate ETI existence.



Quranic Example

In Surah Talaq (Verse 12), Allah mentions that He created seven heavens, and "likewise for the earth." Some scholars interpret this as the existence of different worlds, but other scholars say otherwise. In Surah Shura (Verse 29), Allah mentions He has created all sorts of creatures and He can gather them whenever He wants. Again, some scholars interpret this verse as referring to extraterrestrial beings.



Hadith

One of the great companions, Ibn Abbas (RA) said, "Seven earths: in every earth is a prophet like your Prophet, an Adam like your Adam, a Nuh like your Nuh, an Ibrahim like your Ibrahim, and an 'Isa like your 'Isa." Scholars of Hadith have debated whether to accept this report or not.



What do we believe?

As Muslims, we accept both revelatory and scientific viewpoints. With all the evidence we have now, we can say that ETI existence is probabilistic in both establishment and meaning.



The Initiative on Islam
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DO WE HAVE FREE WILL OR ARE WE SIMPLY PROGRAMMED ?

Freewill: The ability to freely and consciously make choices that are not externally determined.

Determinism: Belief that all events, including human actions, are controlled by causes external to the will. Humans therefore cannot be held accountable for their actions.

Freewill :

- Drive a car
- Choice of food
- Choice of spouse
- Help someone in need
- Achieve goals in life

Pre-determined aspects in life:

- Place of birth
- Race/Ethnicity
- Date of birth
- Sex
- Function of body system eg. respiratory system

Three dimensions that form the human life

1

Laws of the Physical
World (body)

2

Natural
Instinct

3

Free Will

Who is held accountable (mukallaf)?

A mature and mentally sound person who can distinguish between right and wrong. The person is responsible for all his decisions, and will bear the consequences of his/her actions. Accountability only applies to situations in which humans are fully capable. Options come from God, but human beings have the ability for acquisition (*kasb*).

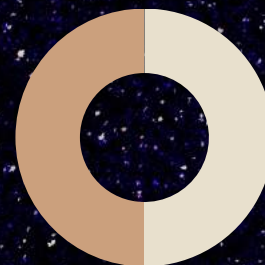
Thus, are we free or programmed?



The Sunni school of theology



Determinism
50%



Free will
50%



Summary

- Humans have the ability to choose within the power of Allah
- We are held accountable only in matters in which we have free choice

What does science tell us about free will and determinism?

Genes and crime behaviour

Mechanism
altered monoamine oxidase
enzyme -> high serotonin -> aggression

Evidence is weak
Association, not
causality

Summary from scientific view

- The interactions between genes & behaviour are complex and multifactorial.
- Scientists differ on whether our actions are determined or we have free will

Freewill & Determinism



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and Medicine

Freewill

Ability to freely and consciously make choices that are not externally determined.

Determinism

Belief that all events, including human actions, are ultimately determined by causes regarded as external to the will

Conflict

Are humans' actions based on freewill or determinism?

Freewill

Humans are granted freewill in certain aspects of their lives. Humans can choose which life path they desire

إِنَّا هَدَيْنَاهُ السَّبِيلَ إِمَّا شَاكِرًا وَإِمَّا كَفُورًا ۝

"We already showed them the Way, whether they choose to be grateful or ungrateful"
[76:3]

A mature and mentally sound person who can make a choice between right or wrong is called MUKALLAF

A Mukallaf is only accountable for what he is capable physically and mentally.

Determinism

Belief that our fate has been predestined by the laws of physical world and natural instinct
Men and women have no free will in their decisions

إِنَّا كُلَّ شَيْءٍ خَلَقْنَاهُ بِقَدَرٍ ۚ

Indeed, We have created everything, perfectly preordained
[54:49]

Man is not accountable for having innate temperaments. However, man is responsible for directing his desire

الَّذِينَ يُؤْتُونَ فِي الْبَرِّ وَالْأَسْرَى وَالْكَطَلِينِ الْقَيْظِ وَالْعَاقِبِينَ عَنِ النَّاسِ
وَأَلَّهُ يُحِبُّ الْمُخْسِرِينَ ۝ ١٣٤

They are those who donate in prosperity and adversity, control their anger, and pardon others. And Allah loves the good-doers.

[3:134]

Genetic Determinism

The notion of human traits and behavior being a product of genes

There is no strong scientific evidence that genes affect criminal behaviors or same-sex attraction.

Genetic determinism can be categorized into full determinism (sole genetic influences) and partial determinism (genetic & environmental influences)

Solution

As Muslims, we believe in divine wisdom. Certain elements in our lives are pre-determined but there are things that can be changed by our efforts, prayers and persistence.

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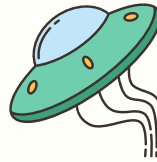


EXTRATERRESTRIAL INTELLIGENCE

DO THEY EXIST?



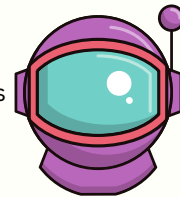
ETI



Extraterrestrial intelligence, or ETI, is essentially life that exists beyond Earth, capable of thinking and doing purposeful activities. ETI existence is a question of ongoing debate.

ETI EXISTENCE

The existence of ETI has not been proven with absolute certainty. There are debates on whether it really exists. The search for ETI has been a continuous pursuit by scientists, and huge resources are being poured into this.



SCIENTIFIC PERSPECTIVE



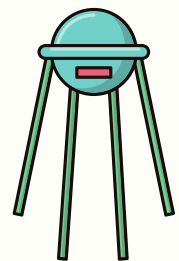
Scientists believe that ETI might exist because the universe is unimaginably vast. There are billions of stars, and possibly be trillions of planets. Many planets have not been discovered. There might be intelligent life on these planets, but we do not know whether if they resemble humans.



ISLAMIC PERSPECTIVE

Muslims seek validation from the Qur'an and Hadeeth, and refer to trustworthy interpretations. In Surah At-Talaaq (Verse 12), Allah says: "It is Allah who has created seven heavens and of the earth, the like of them.."

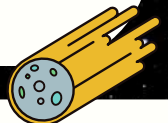
Some scholars interpret this verse as seven "earths", with each having its own kind of life. Others claim that the term "seven" refers to the earth's layers. In short, this verse tells us about the vastness of the universe and the possibility of ETI existence.



CONCLUSION



Some knowledge can only be discovered through revelation. However, scriptural texts may be silent or implicit in some issues. Here, humans should complement their understanding by scientific investigations. Conflicts may arise between revelation and science, but this can be resolved by categorizing the truth claims and comparing their level of certainty.



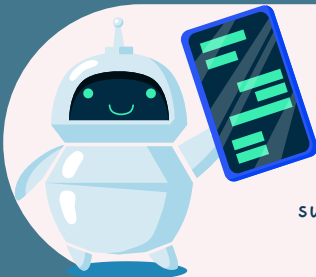


DOES ISLAM SUPPORT TRANSHUMANISM?



★ WHY TRANSHUMANISM AND ISLAM DIVERGE

Transhumanism aims to overcome the limitations of human biology with technology. Such human enhancement can contradict Islamic teachings, particularly those related to the permissibility of changing the body and the ethical implications of that. Some Muslim scholars view the attempts to transcend human natural states as challenging the Divine wisdom and going against the will of Allah.

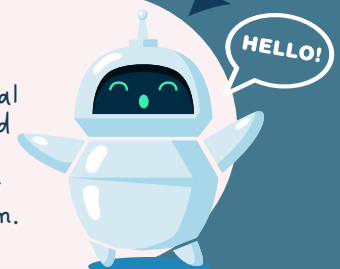


★ ENHANCING HUMAN LIFE

Islam places a strong emphasis on preserving life and improving human well-being. If technological advancements can be used ethically and responsibly to alleviate human suffering, improve health, and increase longevity, this is consistent with Islamic values.

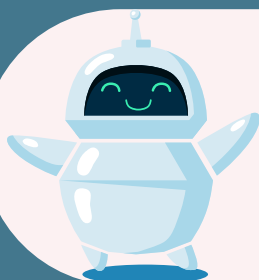
★ ETHICAL BOUNDARIES

Islamic teachings emphasize the importance of ethical behavior and the prohibition of harm to oneself and others. Biotechnological interventions that cross ethical boundaries, opening doors to exploitation or disrupting the natural order are not allowed in Islam.



★ CONCLUSION

Not all aspects of transhumanism contradict Islamic teachings. It is important to note that perspectives on this topic are nuanced and diverse.





Do You Know About TRANSHUMANISM?

Transhumanism

Transitional state of human -> post-human

**EXAMPLES OF TRANSHUMANISM CAN BE
FOUND IN MEDIA AND POP CULTURE**



The goal of transhumanism is to overcome human biological limitations through technology.

Enhancement vs. Therapy

Enhancement: an improvement or extension of some characteristics, capacity, or activity.

Therapy: a treatment for a disorder or deficiency, which aims to restore a person's health..

IS THERE A CONFLICT?

A therapy is acceptable especially when it is a medical necessity. Enhancements are only acceptable for a clear medical purpose and not for aesthetic reasons.

- Discussions on the prohibition of human enhancement center around a few Qur'anic verses.
- The first one is Surah An-Nisa (Verse 119) which warns humans against 'changing the creation of God.'
- The second one is Surah At-Tin (Verse 4) which says that man has been created in the 'best of forms.'

RESOLUTION

When conflicts arise or when a Muslim patient seeks enhancement procedures, it is critical to direct him/her to the right resources and provide clarity on the issue. Physicians with knowledge in theology or Islamic Bioethics can give the patient a more balanced opinion. Alternatively, a multidisciplinary team is ideal to assist the patient in making decisions in line with his or her religious values.

THE ORIGIN OF THE HUMAN BEING

WHAT IS THE ORIGIN OF THE HUMAN BEING?

The First Human Being

According to the Qu'ran, Adam was the first human being and the father of mankind. He was created by Allah in paradise, after which his spouse, Eve was created. Adam made a mistake by eating from the forbidden tree. As a consequence, he was expelled from paradise and sent to earth. But he repented and was forgiven. This story of creation is often interpreted literally but other interpretations exist. There are verses in the Qur'an that suggest the existence of other living beings on earth before the creation of human beings. This came about from the question posed by the angels to Allah when He announced the creation of Adam in Surah Al-Baqarah (Verse 30).

Some people claim that humans evolved from prior living beings. Is this correct?

The claim that human beings, chimpanzees, and monkeys all have a common ancestor from which they evolved is in conflict with Islamic scripture. Man does not belong to the anthropological classification of Homo. Rather, Humans are created from the outset in the complete physical form and fairest symmetrical form (ahsan al-taqwīm). Therefore, from the Islamic view, humans did not evolve over the course of time, from another species. Humans are a living being distinct in essence, not in terms of degree, from other living beings.



Was there any creation other than angels and the jinns before Prophet Adam?

Angels and jinns were created before Adam (pbuh). Some scholars suggest that there was another creation similar to humans living on earth before Adam.

In Surah Al-Baqarah (Verse 30), when Allah announced that that He wanted to create a human being, the angels claimed that humans would cause mischief and bloodshed on earth. According to some scholars, the angels knew about this because there was a similar creation to humans before Adam.

How did the angels know about the destruction and mischief?

Some tafseer scholars posit that the living beings that came before Adam were in fact jinns, and they had caused destruction and bloodshed on earth. The angels thus analogically presumed that humans would repeat the same mistakes. Some other scholars assert that the angels were informed directly by Allah, or that they received the knowledge from Lauh Mahfuz.



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HUMANITY & SOUL



SCIENTIFIC PERSPECTIVE

- Humans exist without any purpose in this world
- Consciousness is only fantasy
- Humans consist of a brain, without any soul



ISLAMIC PERSPECTIVE

يَوْمَ لَا تَمْلِكُ نَفْسٌ لِّنَفْسٍ
شَيْئًا وَلَا أَمْرٌ يَوْمَئِذٍ لِلَّهِ

It is the Day when a soul will not possess for another soul [power to do] a thing; and the command, that Day, is [entirely] with Allah

From this verse, we can understand that the soul is the locus of human identity and the soul has a relationship with the body in this world.

2 Truth Claims

STATEMENT 1

The existence of the soul can be known through self-introspection

-Rational Qat'i

STATEMENT 2

The world only comprises of measurable objects or elements

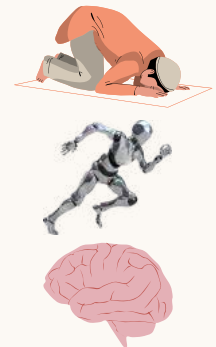
-Rational Zanni

Statement 1 asserts the existence of soul. This is based on rational & revelatory evidence.

Statement 2 denies the human soul. This is based on empirical evidence & Neuroscientific Reductionism.

CONFLICT

As we enter the era of technology, artificial intelligence is becoming more and more prevalent. A developer wants to create an AI-Humanoid that can perform all human functions, but this is impossible because a robot lacks a soul & perhaps consciousness.



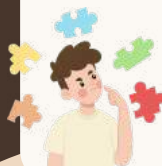
Ways to approach the problem

- Statement 1 is considered zanni (definitive) while Statement 2 is zanni (probabilistic).
- Scientists today who try to create AI Humanoids cannot replicate or simulate the spiritual experiences of humans.



يَا أَيُّهَا النَّاسُ ضَرْبٌ مِّثْلٍ فَاسْتَمِعُوا لَهُ إِنَّ الَّذِينَ تَدْعُونَ مِنْ دُونِ اللَّهِ لَنْ يَخْلُقُوا ذُبَابًا وَلَوْ اجْتَمَعُوا لَهُ وَإِنْ يَسْلُبْهُمُ الذُّبَابُ شَيْئًا لَا يَسْتَنْقِذُوهُ مِنْهُ ضَعُفَ الطَّالِبُ وَالْمَطْلُوبُ

- O people, an example is presented, so listen to it. Indeed, those you invoke besides Allah will never create [as much as] a fly, even if they gathered together for it. And if the fly should steal from them a [tiny] thing, they could not recover it from him. Weak are the pursuer and pursued.
- This verse clearly states that humans will never be able to create anything as perfect as God's creations. They cannot even make a fly, even when they gather all their might & resources.





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THE *UNIQUENESS* OF HUMAN

1 DEFINITION

- Unique: being the only kind of its sort
- Extraterrestrial Intelligent life: A hypothesis that life with action, reason, and intentionality may be present or may have formerly been in the universe (outside Earth)



2 THE EXISTENCE OF EXTRA- TERRESTRIAL INTELLIGENT



3 MULTIPLICITY OF WORLDS AND REALMS EXIST

4 DISCUSSION

The existence of extra-terrestrial intelligence life is empirical zanni, while the multiplicity of worlds is revelatory qat'i. These two notions do not ultimately deny the existence of ETI, rather they support its possibility. The existence of ETI is not in conflict with revelation.

Revelatory evidence

Allah is the One Who created seven heavens 'in layers', and likewise for the earth. The 'divine' command descends between them so you may know that Allah is Most Capable of everything and that Allah certainly encompasses all things in 'His' knowledge (65:12)

5 HOW TO RESOLVE THIS PROBLEM?



- Both revelatory and empirical evidence are probabilistic in nature.
- The Qur'an confirms the existence of multiplicity of realms, which hints at the possibility of other creatures existing beyond our planet.
- Therefore, the existence of ETI is theoretically plausible.





Free Will or Fated?

To what extent is human actions fated?

1

FREE WILL

The ability to freely and consciously make choices that are not externally determined.

Voluntary choice or decision

2

QADA' AND QADR

Qada' : knowledge of God, whose knowledge covers the past, present and future

Qadr : bringing events according to his knowledge in its specific condition, time and place.

3

DETERMINISM

Belief that all events, including human actions are determined by causes regarded as external to the will.

Individual human beings have no free will and therefore cannot be held morally responsible for their actions

4

MUKALLAF

A mature and mentally sound person who can make a choice and is accountable for his/her actions.

Pre-determined aspects in life:

- place of birth
- race/ethnicity
- date of birth
- gender
- functions of body systems

5

GENETIC DETERMINISM

Attributing the formation of human traits at an individual level to genes, perceiving them as having more causal power.

The interactions or link between genes and behaviour are complex and multifactorial.

6

CONCLUSION

- Humans have to ability to choose with the will of Allah SWT.
- We are held accountable only in matters in which we have free choice.
- With regards to crime and same-sex attraction, the evidence of gene determinism is not conclusive and uncertain (zanni).
- The evidence that links genes and crime behaviours are weak. There is association but it is not causal.



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HUMAN VS TECHNOLOGY



*Is humankind moving towards
a transhumanist future?*

Are we slowly transforming ourselves into something beyond the human species? Are doctors (unwittingly) contributing to this future? What are our values around such change?

- Human ailments and physicians are related to each other. A physician's goal is usually to help cure or prevent illnesses.
- Today, biotechnology plays a crucial role in medical interventions, some of which may lead to body alterations.
- Modern doctors will be involved with increasingly sophisticated procedures.



THERAPY VS ENHANCEMENT

Therapy = a treatment that aims to restore normal functions of the body.

Enhancement = improving bodily function beyond its normal state

- Allah has created human in the best form. So, it is unlawful to cause a permanent change beyond what is necessary. However, medical treatment is permissible.
- All in all, battling one's lower self and overcoming desires in order to live according to Allah's will is central to the Islamic worldview.



EXPLORING BIOSCIENCE & ISLAM

Addressing Big Questions about the Human Being

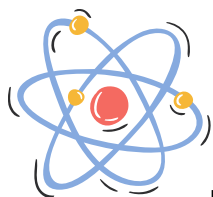


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My Personal Learning Experiences

The seminar series addresses topics at the intersection of Islam and bioscience, encouraging one to approach the subject with a spirit of humility and openness. The conversations were thought-provoking. Differing opinions and counter arguments were presented and examined to deepen students' understanding of the 'conflicts'.



Benefits of the Program

The seminars created awareness on critical issues at the bioscience-theology interface and facilitated exchange of ideas. They unpacked controversial topics by providing a platform for students to discuss, compare differing views and gain insights from experts. Overall, the program contents and materials are a valuable resource for those seeking to navigate bioethics and modern science.



Impact on My Professional Journey

The program has equipped me with decision-making, cultural competence, and analytical thinking skills, all of which are essential for a future physician. The seminars also enabled me to network with prominent leaders in this field and peers from other courses. I felt highly motivated and encouraged by the experience.



What I have Learnt

I gained new knowledge and understanding from the seminar instructors and peers alike. I also earned how to critically analyze truth claims and evidence. The case studies taught me to think more holistically and present my thoughts eloquently. In short, the exercises changed my perspectives on how to approach complex problems.



Personal Reflection

Initially I was a bit unsure to join the seminars. However, the seminar activities made me feel empowered to express myself. I was also fascinated by the sophisticated environment and conversations. Seeing my peers effortlessly dissect intricate topics inspired me to pursue more learning. The seminars were a source of inspiration and a platform build earnest friendships.

Highlights of the Seminars

My favorite part was the discussion on extraterrestrial intelligent life existence. The insights shared were enlightening and the various interpretations of the same text enthralled me. In addition, I thoroughly enjoyed discussing the case studies, conversing about real life problems, and gaining unique perspectives to resolve perceived tensions at the bioscience-religion interface.

Jouhara Ali

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Milwaukee, WI



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Mudassir Ansari

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Understanding Islam and Bioscience

WHAT IS A HUMAN?
WHAT ARE NEUROSCIENCE, AI, AND THE SOUL?



What does it Mean to be Human?

In Islam, to be a human means to have a soul. Modern neuroscientists however equate a human to having a brain, and reject the soul existence. These two views are in conflict, complicating the explanation for consciousness and life's purpose.



Evidence for the Soul

One of the ways to prove the existence of the soul is through self-introspection. This is a quality that allows people to self-examine themselves, being mindful of their inner thoughts, feelings and experiences.



Neuroscientific Reductionism vs. Islamic Epistemology

Neuroscientific reductionism upholds that the world consists of only what is measurable. This approach does not recognize spiritual experiences and purpose in life. In Islam, the physical components are not denied, but metaphysical properties and life purposes are acknowledged and considered central to human life.



Consciousness

The controversy regarding consciousness is whether it exists in the brain or the heart, and whether it exists at all. Some scientists call consciousness an illusion, while others consider it a mental state that cannot be described by physicalism. In Islam, consciousness is related to the human soul which is the locus of human identity.



Artificial Intelligence

AI is a form of technology created to simulate human behavior and ability. There are two types of AI: strong and weak. Strong AI is AI with a higher level ability to mimic human intelligence, while Weak AI is AI that is limited in its capacity (eg: machine learning). To this day, AI is still unable to simulate human experiences, emotions and consciousness.

Transhumanism: Scientific and Islamic Perspectives

Problem 1

Given the biotechnological advancements, humans are pursuing well-being, extreme longevity and potentially trying to avoid death.

Problem 2

Transhumanism aims to overcome the limitations of the human body by technological interventions.

Examples

- Body parts with super function
- Mind uploading
- Genetically engineering the body for augmented function

Changes to the human body

Biomedical interventions often cause 'changes' to the human body. These changes can be therapeutic or enhancing, temporary or permanent

Therapy vs Enhancement

Therapy aims to restore the body parts to its normal function

Enhancement aims to improve function beyond its normal state

Is Transhumanism accepted?

In Islam, practices considered to be therapeutic and medically necessary are allowed, while those with enhancement aims and causing permanent change to the human body are generally impermissible.



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ARE WE CHANGING?

TRANSHUMANISM

HOW SHOULD WE APPROACH IT ?

Transhumanism refers to a 'transitional state' of human beings, who are believed to be on a path of transcending their physical limitations to acquire a stronger and more intelligent form

1 DISEASE

Defined by the
subject or patient

2 DISORDER

Defined by society
(talk about function)

3 DISABILITY

Defined by subject and
society (talk about flourishing)

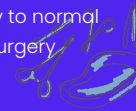
DYSFUNCTION

Abnormality or deviation from
norms



THERAPY

- Practices conducted by allied health professionals
- Aim: Restoring the body to normal function. Eg: cataract surgery



ENHANCEMENT

- Can be practiced by health professionals or other experts. Aim: Improving performance beyond biological function. Eg: Bionic arm implant



فَوَسْوَسَ لَهُمَا الشَّيْطَانُ لِيُبْدِيَ لَهُمَا مَا وُورِيَ عَنْهُمَا مِنْ سَوْءَاتِهِمَا وَقَالَ مَا نَهَاكُمَا
رَبُّكُمَا عَنْ هَذِهِ الشَّجَرَةِ إِلَّا أَنْ تَكُونَا مَلَكَتَيْنِ أَوْ تَكُونَا مِنَ الْخَالِدِينَ

Then Satan tempted them so that he might reveal to them their shameful parts which had been hidden. He said to them, "Your Lord has forbidden you to go near this tree only lest you should become angels or become immortals." (Quran, 7:20)

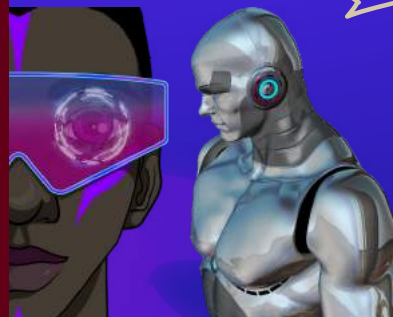
Islamic perspective: Technological advancements that improve human well-being and prevent/ or cure diseases are generally encouraged. However, there are boundaries set. Therapeutic procedures that aim to restore the normal function (as a result of an illness or injury) is permissible. Enhancement that causes permanent changes to the body and are not medically necessary are not allowed.

لَقَدْ خَلَقْنَا الْإِنْسَانَ فِي أَحْسَنِ تَقْوِيمٍ

Surely We created man in the best
form (Quran, 95:4)



- In this verse, Allah tells us that He has created humans in the best form. This should motivate us to offer gratitude and constantly strive for greater spiritual heights.. Having the right worldview about this life journey and purpose of creation makes us see the triviality of the end goals of transhumanism.



DO WE HAVE FREEWILL?



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WHAT IS FREEWILL?

THE ABILITY TO MAKE
DECISIONS FREELY
AND ACT UPON THEM



WHAT IS DETERMINISM?

THE BELIEF THAT ALL EVENTS
HAVE BEEN PRE-DETERMINED

Ola Abdel
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EXAMPLES

FREE WILL

What food to eat
Where to drive
How to treat
someone

DETERMINISM

Biological sex
Birth place
Race

Certain aspects in our
lives have been pre-
determined. In some
other aspects, we are
endowed with free will.



IF ALLAH ALREADY KNOWS EVERYTHING, HOW IS FREE WILL POSSIBLE?



Given His infinite knowledge, God knows what we will choose and where we will end up. But this does not mean He imposes His will on our action. God provides us with options and guidance through revelation. Humans choose and will be held accountable.

WHAT ROLE DOES GENETICS PLAY IN DETERMINISM?

Some scientists believe that the human behavior is influenced by their genes. However, scientific evidence on this is probabilistic, not conclusive. Genes may play a role, but they are complemented by other external factors. Islam does not deny the role of genes, but assert that humans are born with innate ability to think and make moral choices.



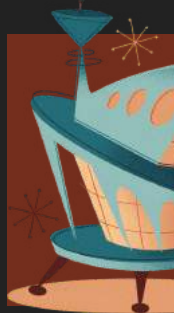
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EXTRA- TERRESTRIAL LIFE

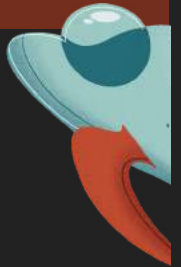


ISLAMIC VIEW

The Quran does not explicitly support or deny the existence of aliens. However, some verses hint at this possibility. For example, Surah At-Talaq (Verse 12) states that Allah created seven heavens and earths of its kind. This possibly indicates the existence of other worlds, and hence, other forms of creatures.

RATIONAL VIEW

Rationally speaking, it is possible for aliens to exist given the vastness of the universe and the fact humans have only explored a small fraction of it. An infinite universe means endless possibilities..

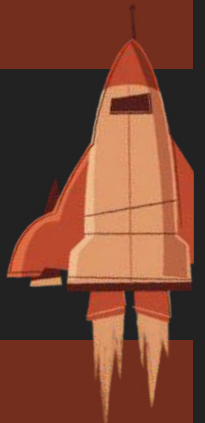


EVIDENCE

Today, there is no robust or solid scientific finding to confirm the existence of aliens. Many speculations are going on, but existing existence is still largely probabilistic

SCIENTIFIC VIEW

There is no consensus among scientists with regards to the existence of aliens. Some scientists support it while others do not.



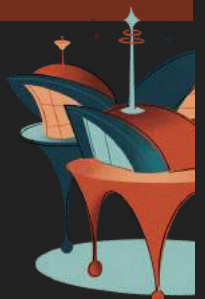
ISLAMIC VIEW

Like scientists, again there is no consensus among Islamic scholars about the existence of aliens. However, based on some verses of the Qur'an that emphasize the vastness of the universe and multiplicity of worlds, alien existence is possible.

WHAT SHOULD WE BELIEVE?

Given that both modern science and Islam support the possibility of alien existence, it is not difficult for Muslims to reconcile this issue.

However, it is also critical for us to see the 'bigger picture' about what issues should be prioritized, and whether it is worth spending so much resources for this quest.





THE ORIGIN OF HUMAN BEING



The Initiative on Islam and Medicine



01

What is the origin of human beings?

02

Based on the scientific perspective, all biological life originates from a common ancestry

--> Zanni

A belief or opinion with the possibility that otherwise may be true.



03

Based on Quran, Prophet Adam was a special creation from Allah == Non Evolutionary Product

--> Qat'i

Authenticated, unambiguous, definitive, or certain



04

Based on our intellect, pre-human creatures could have existed before Prophet Adam

--> Zanni

PRE-HUMAN

An extinct primate/ extinct hominid that resembles or is ancestral to humans



05

There is a conflict between 2 & 3, and between 3 & 4



06

To resolve this,

We need to know which source(s) the judgments are coming from, and their level of evidence certainty. Revelation is considered definitive while scientific findings are probabilistic,

Qat'i >> Zanni



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Are human beings unique in this universe?

DO ALIENS EXIST?

Throughout human history, the question of whether we are alone in the ever-expanding universe has been constantly debated. The idea of extraterrestrial life, or aliens, has captivated the imagination of global communities, sparking debates and scientific inquiry. This curiosity manifests in various forms in popular culture, scientific research, religious ideologies, and philosophical reflections.

DEFINITION

- **Extraterrestrial life:** life that exists or may have existed outside of Earth.
- **Extraterrestrial intelligence:** hypothetical extraterrestrial life that is capable of thinking and doing purposeful activities.
- **Astrobiology:** a multidisciplinary field dealing with the nature, existence, and search for extraterrestrial life. It includes biology, astronomy, and geology.

WHAT COMPLICATES THIS ISSUE?

The debate of alien existence is compounded by many factors such as inconclusive scientific evidence, portrayals in popular culture and media, religious and philosophical views, fear of the unknown, pseudoscience and public skepticism.

SCIENTIFIC VS ISLAMIC PERSPECTIVE

Conflicts between scientific view and Islamic theology can arise due to differing methodologies, frameworks, and interpretations of religious texts. Having clarity about the origin, nature & level of certainty attributed to each view is critical.



FREE WILL OR FATE?



How can free will and fate simultaneously exist?

This concept is hard to grasp. Confusion arises because the notion of predetermination seems to clash with free will. How can God know or determine our end before we have acted? If our fate is predestined, what is the value of our action?



Allah ﷻ is beyond our understanding of time and space.

HOW TO APPROACH THIS ISSUE

Predetermination implies God's infinite knowledge and wisdom. It does not mean He imposes His will on our action, rather He knows what our choices will be. We are granted options, intellect, and the freedom to choose.



GLOSSARY

Term	Definition
Introspection	Knowledge by self-reflection
Ontology	The nature of the world and what it contains
Transhumanism	Transhumanism is a philosophical and intellectual movement which advocates the enhancement of the human condition by developing and making widely available sophisticated technologies that can greatly enhance longevity and cognition
Changing Creation	An ethical notion that relates to materially or immaterially changing God's 'order' There is diversity of view on what this entails
Free will	The capacity to choose between different possible courses of action
Fate	The development of events outside a person's control
Determinism	The belief that all events, including human actions, are ultimately determined by causes regarded as external to the will
Accountable	Responsible person who is no longer a child and is treated as an adult legally In Arabic, <i>mukallaf</i>
Genetic determinism	A belief that human behavior is directly controlled by the genes
Epigenetics	The study of how cells control gene activity without changing the DNA sequence.

