

3c: The Golden Age of Islam

Lesson 2: Student Resource Sheet 2a

An interview with Khalil Chamcham: a transcript



What is your name and where are you from?

Khalil CHAMCHAM: I am from Morocco

What do you do? What are your qualifications, as well as previous jobs or areas of research?

I am currently doing part-time research in Astrophysics and part time research in Theology. I work on cosmology, the formation and evolution of galaxies, as well as on the process of star formation. I also study the question of time and the origin of the universe as well as the relationship between modern science and Islam.

I hold a DPhil in Astrophysics from the University of Sussex and a French Doctorate in Nuclear Physics. Prior to these degrees, I graduated in Mathematics and Physics.

I have been teaching for many years in the University of Casablanca (Morocco) and I've worked in different research centres in France and Italy.

I am also involved in the inter-faith dialogue between Christianity and Islam.



How did you get involved in working in astrophysics?

As a teenager I was fascinated by the idea of the existence of a microscopic world and this is why I studied Nuclear Physics and Quantum Mechanics. Later on I moved from Nuclear Physics to Astrophysics because I realised that a lot of my work could be applied to understanding the nature of stars. On the other hand, I realised that if I wanted to understand the origin of chemical elements like carbon, oxygen and iron, I needed to study their place of origin - the stars.

All these questions are related to the origin of the universe and its evolution. But while studying them, my brain keeps on asking questions like 'Why is this happening?' 'Who made it happen?' 'We know only a little about what is going on in the Universe, is there a Being who knows everything?'



How would you define science?

This is not an easy question to answer. If I try, I would say that science is a rational way of explaining nature and phenomena, but I would define science by its method. Science has a well defined method of investigation, a scientist or a group of scientists proceeding as follows: 1) observe or suspect something 2) ask questions, 3) make assumptions, 4) write a mathematical model on the light of these assumptions in order to provide an explanation or make a prediction, 5) develop experiments or a computing programme to test these assumptions, 6) give explanations in the light of the data of these experiments and mathematical modelling and finally, 7) the proof is given by the possibility to repeat the experiment and reproduce the same data, within an acceptable margin of error or uncertainty. This is what I mean by a rational way of explaining phenomena.



Do you find the study/exploration of science enhanced by your faith or not?

For me doing science is caring for the future of our society. What we are doing with our life and to each other is our own responsibility not the responsibility of God. This is explicitly stated in the Qur'an and I am happy with it. Although I said that science is based on rationality, I find, paradoxically, that the reason I do science is not rational. In other words our motivation for developing science is not subject to the scientific method. I am doing science because I feel a joy in understanding what I believe is the 'Work of God'. I feel happy being engaged in what makes us human beings with a culture, a sense of aesthetic and a quest for the unknown.

Does the Qur'an say anything about science, and how a Muslim man or woman should view it or act towards it?

In the Qur'an it is said that God will never show himself to any human being, not even to the prophet Muhammad himself. However what is said is that we see signs of God and signs of his Work (i.e. A'ya or the plural A'yat) and more precisely these signs can be seen only by men and women of knowledge. Only those who engage in scientific investigation and wander around the earth to discover other civilisations, other lands and different creatures can see, understand and value what God has created. Ignorance is the most repelling thing to God. And in the Qur'an it is said that only men and women of knowledge can fear God. So faith in Islam is closely linked to science and knowledge.



How would a Muslim scientist decide whether certain types of scientific research (in human embryology for instance) were morally acceptable or not?

I don't think the judgement of an honest Muslim should come from a pre-established conception that this is right and that is forbidden. Scientific research in general should be carried out within the limits of ethical values. So, for example, this view would have said no to the Nazi scientific programme which promoted cutting edge science but was based on deeply unethical values. The Qur'an itself does not set limits to scientific investigation: it does not upset God that we are planning travels to the other edge of the universe or discovering how an embryo develops - instead this pleases him because this is how we experience awe and feel his Majesty. However, *how* we did it and what we are going to do with what we have discovered *is* of concern to God: are we going to apply our genetic findings to produce an army of slaves and cheap labour? Did we kill to learn something about the foetus or did we impregnate an animal with a human foetus to understand something about genes? Are we using our scientific findings to prove that God does not exist?



Are there areas of scientific advancement with which Muslims would not be happy? Can science ever be a bad thing?

Let me use one example: Islam prohibits alcohol yet it is thanks to Muslim scientists that pure alcohol was discovered at all. Muslims are still not allowed to drink alcohol but no one on earth can deny the medical benefits of pure alcohol. In my opinion, if scientific research proves that a discovery is a solution to cure some threatening disease, Muslims should reform their views if the object of the discovery was declared forbidden (Haram) centuries ago. Priority should be given to human well-being. Islam is very open to amendments and this is the golden teaching of the *Hadith* (the direct teaching of the Prophet Muhammad and, after the Qur'an, the most important collection of writings for Muslims). These questions are not addressed to Islam as a faith but to Muslims as interpreters of Islam.

**Khalil Chamcham
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