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“Science for Humanity”

I would like to thank the 14th Conference of Islamic Academic Science for the invitation to speak on “Science for Humanity”. If I may I would like to go back into history and remind ourselves of the role and progress of science.

2. There was a time when the Europeans were suspicious of science and were prepared to put to death the scientists whose theories seemed to challenge religious beliefs regarding life and its origins, the sun, the moon and the stars, and everything else that surrounds humanity.

3. Now science is so completely accepted by them that the ethnic European scientists have become arrogant, believing that there is no limit to what they can do, which their people would not approve. They even believe there is no more need to go through the process of conception and birth in order to beget another living creature. They can clone replicas from tissues, determine their characters, propagating what they believe is good and eliminating what is bad. In other words they would do better than god, or what they prefer to call nature. They would in fact be playing god.

4. We need science and scientists. But we do not need intellectual arrogance to the point where there no longer is respect for anything except the supremacy of science.

5. Before we harness science for humanity, we need to have a proper understanding of the power of science. Far too often scientists reject the spiritual, reject religion and the existence of god or Allah. Muslim scientists in particular must be careful to avoid this kind of arrogance and the rejection of faith.

6. Science is a tremendous instrument for the good of mankind. But scientists must remember that they are not god, not Allah. They must remember that there is Allah, a supreme being, the Creator, because science is limited in its power and it cannot really do anything unless Allah wills it.

7. Scientists have only to ask the question why and they will immediately find that they really do not know the answer. They can answer how things happen the way they do, how there is the sun, the moon and the stars, how we are instead able to live and plants to grow but they can never explain why all these are as they are. Every time they try to explain why things are as they are, they will find themselves explaining how things are instead and not why things are.

8. The simple symbol H₂O stands for a molecule of water produced by the combinations of 2 hydrogen atoms and one oxygen atom. That is how water is formed. But why should water be formed with these two elements combining in this specific way and not some other elements? Why hydrogen and oxygen, not chlorine and argon or whatever? There is no answer.

9. Some will say it is nature or it is natural. But what is nature and why should it be natural? What or who determines what would be natural? We have no answer except to say that it had determined that this should be so. But who determined. And science cannot answer that question.

10. Go on to ask why things are as they are and we will find no answer except to say it is natural, which really means we do not know unless we admit there is a power which determines this.

11. And that power is more powerful than we had thought because we are discovering more and more of the things that have been created. We know now that the universe is far far bigger than we had imagined. We had to measure the sizes of the heavenly bodies in light years, the distances between the stars in millions of light years. We know now that our sun is but one star in many, some bigger than our sun, each with its own planets orbiting it. We are a part of the milky way but there are other galaxies. The mind just cannot imagine the sizes, the numbers and the billions of years that all these have existed. These things are truly mind boggling.

12. Here on earth we have discovered that we are made of tiny atoms which in turn are made up of even tinier electrical charges, the number of which determine the elements. Somehow the molecules formed give us life and character. The smallness of the matter with which we and everything else are made is just beyond the capacity of our minds to conceive or imagine. Yet there are so many creatures, and so many other living forms arranged in particular ways to produce distinct beings with distinct and different characters, so different – that – no two, even of the same species are exactly the same. The six billion people on earth and all those who had passed away and those who will be born have DNAs that are different, fingerprints that are different, features that are different. Indeed no two living creatures have exactly the same DNA or the same attributes.

13. All these, the size of the universe, its age, the size of the atoms and how they combine to form gas, liquids and solids, the infinite variety of things on earth and in the universe, cannot be explained away by saying that it is nature, nor can our knowledge of how things are and how things happen explain why they are so, unless we assume that there is a creator, greater than we had thought before or we can imagine now who decided on all these.

14. We may be able to clone humans but even that cloning must be because the creator has determined that cells will behave in such a way that cloning would be possible.

15. Which ever way we turn we will come to this question which we cannot answer, the question why things are as they are or behave the way they do. And ultimately we have to conclude that there is a great power, a creator who had determined all this. And admitting this, we and all scientists, need to be humble, to cease to be arrogant and to acknowledge that we do not know everything. We ourselves are created by a power that the human mind cannot truly comprehend except to acknowledge its power to make things happen. We can call that power what we like but it is there. And Muslims call that power, that creator Allah. And, no matter how great we are, we are his creation.

16. Having done that we must now admit that on balance, science has contributed more towards the destruction of mankind than to his salvation. We have enough nuclear warheads in the armory of just one nation to totally destroy this planet and every single soul living on it. But we are still not happy with this destructive power that science has given us. Today in the countries of the powerful billions are being spent on the invention of ever newer destructive weapons.

17. We have seen the power of the atom bombs on Hiroshima and Nagasaki. During the second world war thousands of bombers dropped high explosives and incendiaries simultaneously on Dresden in the last few months of the war to kill and suffocate 200,000 defenseless people, and flatten a city of no military importance, even though the Germans were ready to talk peace.

18. During the Vietnam war the democratic forces sprayed agent orange so that today not a single tree of a beautiful green tropical forest is left standing. People were also affected by agent orange; many died or were struck by certain diseases. Today the grandchildren of the affected suffer and die from these diseases.

19. The products of scientific research often leave behind a trail of diseases and deaths for generations.

20. As I said, scientific research is still being carried out to find and develop more efficient ways of killing more people with minimal risk or no risk to the killers. Rockets which can carry nuclear warheads can be launched from more than a thousand kilometers away. New unmanned aircrafts can attack in flocks so that most would get through to deliver their deadly cargo.

21. Nuclear bombs which can penetrate the ground to great depths are being developed in order to ensure that no one, least of all the leaders and the command and control centres can be located deep underground for safety. Stealth aircrafts are designed and developed by scientists which defy detection. And stealth ships and tanks are also coming off the drawing boards of the scientists.

22. The chemists are also busy developing poisonous gases which paralyse and kill in various ways. Biologists are breeding germs to spread disease and kill people. Newer uses are being made of nuclear material. Nuclear wastes are smeared on bullets so that if the victims get merely a superficial wound, he would die of diseases from radio active material.

23. Convinced that no one can war against it, the nuclear superpower with its arsenal of the latest weapons developed by its mad scientists, no longer pretends to be nice. It is now either submission to its demands or it will use military force to invade, to change regimes and to exploit the wealth of countries for its own enrichment.

24. Science clearly has not been used in the service of mankind as extensively as for its destruction. There is nothing wrong with science. But there is everything wrong with the people in power who manipulate and use the scientists. It is these evil people whom we have to guard against, to prevent them from getting into power and controlling the scientists.

25. Science really can contribute immensely to human good. Without science it would be impossible for population growth to reach 6 billion plus for the whole world. There would not be enough food produced, or if produced to transport the food, to store and preserve and to make it accessible to those in need. There would be famine in various parts of the world, epidemics of various kinds of infectious diseases and millions would die.

26. There is no doubt that we are much healthier today because we do not depend on witch doctors and magic for the treatment of the diseases we suffer from. Science has identified the causes and formulated the medicines to treat diseases. Science has enabled us to open up the living human body to literally carry out repairs. Science has even made it possible to transplant organs from one person to another.

27. Our lifespan has increased tremendously. We live a healthier life. Our fertility has improved. Some diseases are still incurable but there is hope that soon the scientists will find cures.

28. It would not have been possible for millions to live closely together in towns and cities had not science developed ways of treating human waste. Certainly high rise buildings would have been impossible.

29. Today we can be reached instantly by a little gadget even if we are on the other side of the globe. And we can travel at nearly the speed of sound over thousands of miles.

30. Science has cloned animals. And now science wants to clone humans. A question of ethics arises here. Do we give the scientists a completely free hand to do anything that they want to do? Or do we say thus far and no more?

31. Freedom in human society can never be absolute. Even democracy recognises that. No matter how liberal a democracy that is practised, there is a point beyond which we are not

allowed to go. True the limit has been shifted again and again. But each shift would still define a limit.

32. Sexual freedom has been rendered almost complete by the invention of birth control pills. But at this point in time we still consider incest as unacceptable. No doubt this restriction will be reduced later. After all if a father is not going to beget a child from a daughter, or a brother by a sister, because of the use of the pill, what harm is there? Where do we stop? Pharaohs used to marry their mothers. Why cannot we go back to this ancient practice, especially as it will not result in children being born?

33. So what is wrong with cloning? It is not perfect yet. But trust the scientists. They will in time perfect it. Then what need is there for men and women, for their marriage, for the institution of the family. Already we are redefining the family. It is no longer the unit consisting of a legally married couple and the children they beget. The ethnic Europeans are already accepting homosexual couples with adopted children as a family, unmarried women with children conceived through casual liaisons with numerous unknown men as family and many other permutations.

34. So why should we not clone humans, producing perfect specimens, dedicated to the work that they would be required to do? We can have whole armies of soulless soldiers to go into battle and be killed. From those who have been killed we can collect tissues to produce more and better soldiers.

35. This sounds like a nightmare. But the way science is going, the nightmare can become a reality. So do we just leave the scientists to their devices or do we legislate against certain scientific activities? When do we consider the stem cells as an instrument to cure illnesses, and when do we say that the research in stem cells should be subjected to certain ethical and legal limits? When do we say that this is science in the service of humanity and when do we say it is not.

36. We talk about rogue states when we see governments which fail to curb the terrorists in their countries. The rogue states of the future will be those which will not control and limit certain scientific activities, the states which will permit human cloning for example, to produce expandable soulless warriors.

37. Will the rest of the world stand by and do nothing or do we insist that the world community control certain scientific experiments and activities? It is going to be more difficult than controlling terrorists. The rogue states involved with harbouring terrorists are weak, and unsophisticated. But the rogue state which will ignore international laws regarding the limits of science will be the very rich and the very powerful. We have already seen how they can ignore international opinion and sanctions with impunity.

38. I pointed out at the beginning that the Europeans initially feared science. They believed it would undermine their faith in their religion, Christianity. That same fear assailed the Muslims two or three centuries after the Europeans overcame their fears.

39. As we all know Muslims espoused science soon after the coming of the religion. The early Muslims took the word "i'raq" literally. They believed they should read and to read must result in the acquisition of knowledge. And so the Muslim scholars researched and expanded on the early scientific works of the Greeks, the Indians and the Chinese. I will not mention the names of the Muslim scientists who contributed so much to the sciences – as you all know them.

40. Then suddenly they ceased to study science. Why? It was because the learned ones, the ulamas, the interpreters of Islam who know nothing of science, decided that "i'raq" meant studying religion only. Only those who study religion, those who were like the ulamas would gain merit in the afterworld, who should be respected, looked up to, and accepted as leaders in this world.

41. Science was proscribed and regarded as irrelevant to Islam. The study of science stopped abruptly.
42. Where before the Europeans looked to the Muslims for knowledge, after the teaching of the ulamas, the Muslims became illiterate in science. And they became incapable of keeping up with the Europeans who had learnt from them, literally their own pupils. They were not able to participate in the industrial revolution. And eventually they became dependent on the Europeans for science and the products of science.
43. To this day they lack faith in the scientific abilities of their own fellow Muslims. In anything technological they would distrust their fellow Muslims and take everything presented by the Europeans as perfect. Even if they have managed to regain their independence, their minds are clearly still colonised.
44. The Europeans feared science at first. But they overcame this fear to the point of regarding it as a religion to replace their religion. The Muslims should also overcome the fear of science but they should never forsake their religion. Science should really strengthen their faith in Islam, for they must know that the achievements of science are only possible if god, Allah, wills it.
45. Muslims must show the way by which science could be used for the good of mankind, not for its destruction. We must put back religion into science, give it a human face, stop the world from going over the brink to its destruction through science.
46. Can we do this? Some say that Muslims cannot even catch up with the ethnic Europeans in science, much less lead them. But why cannot we? Is it because Allah has endowed us with less brain than the Europeans? Certainly not. We were better scientists than the Europeans during the golden age of Muslim civilisation.
47. Even today hundreds of thousands of Muslim scientists are contributing to scientific knowledge, are researching, are involved in leading edge technologies. But they are not doing this in Muslim countries. They are doing this in non-Muslim countries.
48. They are contributing to the scientific advancement of countries which often are hostile to Muslims, which regard Muslims as terrorists, incapable of governing their countries etc. They are in these countries because Muslim countries are hostile, or at least inhospitable towards them. And so practically all the prominent Muslim scientists live and work in non-Muslim countries.
49. If we are really interested in science, including science for humanity, we have the intellectual capacity to do so. And we are rich enough to do so. We can cease to be hostile to our own scientists. We can provide them with the necessary laboratories, equipment, funds and personal incentives so that with this, the Muslims can quickly regain the lost ground in the field of science. All that is needed is the will. The capacities are already there.
50. Then we can talk about science for humanity, certainly about science for the Muslim ummah. Three-quarters of the Muslims live in abject poverty, without adequate food, without access to modern medicine, without the simple amenities that many of us take for granted. And one-fourth of Muslims wallow in wealth, living in palaces, dining tables weighed down with food that will mostly go to waste, owning luxury cars, yachts and aeroplanes, with wives encased in gold and diamonds even though they are hidden from public eyes.
51. Despite the injunctions of the Quran, when we give we want to be seen by all that we give.

52. If only a fraction of what the rich among us spend on luxuries is diverted to scientific research to serve humanity, there would not be so many starving people in the world, so many Muslims living only slightly better than animals.

53. We need not discuss science for humanity really. It is not science which is incapable of serving humanity. It is our attitude, our mindsets which should be the focus of our attention. It is our deliberate rejection of science which has deprived us of the fruits of scientific knowledge.

54. Science can serve humanity. But first we must accord science the place that it deserves. This is a question of understanding, a question of having the will to acquire scientific knowledge because of our understanding of what science is.

55. If we are prepared to do this then the way is clear. We have to be hospitable to science and scientists, to provide the funds, the facilities, the policies and the laws in order to induce our Muslim scientists to come back, indeed even the non-Muslim scientists to participate in our research and development for humanity.

56. If we are prepared to do all these then only should we determine the areas of science which we believe can contribute to the betterment of mankind. We should eschew the search for the destructive role of science, except that we must have the capability to protect ourselves as enjoined by Islam.

57. Saying that the rich are getting richer and the poor poorer may sound like repeating a hackneyed cliché. But the fact is that it is true. The amount of time spent in the United Nations and the WTO to hammer out agreements which will enable the rich to fully exploit the world is many many times more than that spent on overcoming poverty. Yet if more time is spent on discussing ways and means to eradicate poverty, much of the poverty that we see today would disappear.

58. The rich should learn to understand that when they enrich people they will also enrich themselves. A poor world will be a poor market for the rich to sell their goods and services. Instead of merely maximising the royalties or the returns on the products of scientific research, they should direct their research on how science can serve the poor better.

59. Today we are seeing new diseases making their appearance. And we have not really found remedies or methods of preventing the spread of these diseases. We have not found treatment for Aids, for Ebola, Japanese Encephalitis, Avian Flu, Mad Cow Disease, Sars and new strains of Malaria and Tuberculosis. With the speed of air travel and the distance that can be covered in just a few hours, together with the huge numbers of travelers, it is entirely possible for an infectious disease to spread throughout the world in a massive epidemic. It could have happened with Sars which was said to begin in china.

60. Everyday tens of thousands of Chinese fly to every corner of the globe. The carriers may show no symptom on boarding their planes or even when disembarking. The whole crew and the passengers would have been exposed to the carriers during the flight. At the destination whole towns could be exposed when finally the carriers shows the nature of the disease he is carrying.

61. Whole towns and countries would have to be quarantined – thus endangering those who are not yet infected. There would be an epidemic somewhat like the bubonic plague.

62. We are not doing anything to prevent this epidemic from becoming a reality. Our scientists have not been mobilised. The methods of detecting disease early have not been given due attention. The methods of vaccine production and rapid testing of drugs that can be used have not been developed.

63. We are extremely careful about screening plants and the quarantine of animals. But the amount and numbers involved are small. The suspected carriers can be immediately destroyed. But we cannot do this to the large numbers of people flitting from country to country.

64. We have to think of new ways to handle the suspected carriers among the travelers. To quarantine a carrier together with contacts who have probably not yet been infected is to say the least, unfair. The possibility of their getting infected will now be greater. The only solution is to isolate the contacts from each other i.e. to quarantine them individually. Perhaps protective clothing alone would be enough. In any case the staff of the quarantine station needs to deal with those under quarantine and will have to wear protective clothing.

65. Whereas protective clothing worn by the staff is to prevent them from getting infected, protective clothing for those exposed to carriers should be to prevent them from infecting others.

66. There is at present no scientific study on how to deal with the possibility of a pandemic caused by the spread of disease through air travel. Yet we are today very concerned about terrorism and scientists are tasked with devising ways of preventing attacks by terrorists. Actually we need not spend as much in order to develop ways of combating the spread of infectious diseases.

67. Science clearly is not being used for humanity. It is being used for politics, for killing people, for armed aggression etc.

68. Perhaps devising ways of using science for humanity should be a Muslim initiative. If we do that we may regain our good reputation and honour. We can decide. And if we are sincere we can act to influence those in power in the Muslim world to refocus on the positive and reject the negative.
