

# **Cultivation, Recognition and Support for Courageous and Responsible Scientists**

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It is a great and precious honor to be awarded the 2014 Freedom and Responsibility Award by the American Association for Advancement of Sciences. As a young student in atomic physics pursuing the latest groundbreaking experimental research in optics and photonics, it has been a painful shock to be incarcerated for a long period, without any legal justification, against my home country's national interests and in violation of international human rights' principles. This episode has been very costly to me personally as well as to the others who have witnessed these illegal actions. But it has also been very educational and I hope the lessons in awareness and vigilance will help prevent such actions being repeated elsewhere in the world.

I will take this opportunity to use this respected podium to declare my absolute innocence as outlined in my own defense and in statements by my honorable lawyer, and based on my acquittal by the Supreme Court. However, my 10-year prison sentence was reaffirmed under pressure from security agencies in another review court. The notorious judge who sentenced me is known for his lack of independence. He and a few other judges are hand-picked to make rubber-stamp decisions. They undermine the Judiciary's credibility and leave a stain on the majority of judges.

I love my country. Our Iran is a land with an ancient civilization and a highly developed culture. I would never take any step to harm my people. I was only a scientific researcher. I was not involved in any political activities or held any political views. But they threatened to send me to prison for 10 years if I refused to cooperate in nuclear projects with certain organizations against my will - organizations that work against the interests of Iran and the world. For myself and my family it is obvious that it is because of our moral and academic principles that we suffer the hardships of prison, rather than being part of an effort that makes the world suffer. Pressure groups within Iran have blocked any attempts to resolve my situation by preventing my calls for justice from reaching higher authorities.

My brief account here does not contain anything new. These views have already been presented by prominent individuals. But history's irony is that we must constantly pay the price and repeat these words so that they will be remembered and serve as reminders to remain firm. On the one hand science and technology improves all aspects of humanity. On the other hand, unfortunately, governments, especially authoritarian and inhumane regimes, use science and technology to gain, maintain and impose power. Scientists face a double-edged sword between life and death. They can have a fundamental role in deciding in which direction their knowledge will be used.

Here I would like to point out two things. The first is that scientists are responsible for their work and its impact on society and the future of humanity, just as a mother protects her child and feels responsible in raising her properly. Scientists have a responsibility to refuse cooperation in any project which is harmful to society, such as weapons of mass destruction, the destruction of the environment, or the misuse of science for ideological, false or deceptive purposes by governments or companies. This is something I have strived to play a small part in and I hope my academic colleagues all over the world will hear me closely and commit to the same course of action. This is not a matter limited to the military or specifically weapons of mass destruction. On the 50th anniversary of the atomic bombing of Hiroshima, Professor Hans Bethe, winner of the Nobel Prize in Physics, and a key member of the Manhattan Project, pointed out the danger of all endeavors which harm humanity: “I call on all scientists in all countries to cease and desist from work creating, developing, improving and manufacturing further nuclear weapons – and for that matter, other weapons of potential mass destruction such as chemical and biological weapons.”

The second thing I would like to point out is something I have learned in these past four years from living among political prisoners and prisoners of conscience and that is the need to support scientists, engineers and technicians who based on moral and humanitarian principles expose violations by governments and institutions. They expose them to inform the public of state and institutional wrongdoings in order to initiate appropriate reactions that would stop or correct them. These whistle-blowers often face the wrath of the wrongdoers and thus they often pay a heavy price for their disclosures. Therefore they need our support.

Joseph Rotblat, physicist and 1995 Nobel Peace Prize winner, said it so beautifully: “The purpose of some government or industrial research is sometimes concealed, and misleading information is presented to the public. It should be the duty of scientists to expose such malfeasance. Whistle-blowing should become part of the scientists’ ethos. This may bring reprisals: a price to be paid for one’s convictions. The price may be very heavy.”

In this light I suggest that scientific and human rights groups strengthen and expand their activities in this area while at the same time establish a joint international organization that would create the largest network of scientists from around the world. Foremost, such a network would be in charge of training courageous, responsible and humanitarian scientists armed with moral principles that would make them aware of the dangers of misusing scientific and technological advances. Secondly, this organization would rise to the defense of scientists who face the danger of standing up for their humanitarian principles. This is not just a matter for imprisoned scientists but it also includes all other scientists, engineers or technical experts who become vulnerable when they refuse to participate in destructive or inhumane projects or when they expose scientific or technological wrongdoing.

The second part of my address is about the responsibility of scientists to put greater effort into informing the public of the reasons behind minor and major natural events. Of course this is one of the obvious

objectives of modern science. But, unfortunately a large portion of the world's population live in societies that are under the influence of prejudicial propaganda, old superstitions or superficial and pessimistic ideas. Hence I am compelled to emphasize that a lack of understanding of scientific realities and the belief in false ideas, among all ages, allows profiteers to take advantage of the general ignorance in society and lead them to make irresponsible choices that ultimately harms humanity in the many different ways needed to improve life on this planet.

In prison I have been an eyewitness to false beliefs mixed with deep-rooted superstitions among members of society who have a frightening influential role. For this reason one of my important activities in prison has been to organize study groups on the origins of the universe, which have been extremely popular. This has been a very heart-warming experience because it shows individuals who have never been exposed to proper scientific learning are very receptive to correcting their views when they listen to a trusted scientific authority.

Ultimately my message to scientists, especially those of my generation, is that science and scientists are too important and powerful to be at the service of inhumane activities or to the consolidation of dictatorships based on superstition and dogma. Scientists are trained to reduce the pains of humankind and help its survival. You are at the core of empowering humanity and therefore it is you who must courageously carry out your humanitarian responsibilities!