

Q&A: FREEMAN DYSON



This year the Federation of American Scientists is celebrating its 65th anniversary. Many of the issues of concern to the FAS founders exist today. Freeman Dyson, Professor Emeritus at the Institute for Advanced Studies at Princeton University, former FAS Chairman and long time FAS Member, was interviewed and supplied his answers to FAS questions via email.

Learn more about Professor Dyson by visiting: <http://www.sns.ias.edu/~dyson/>

One of the objectives of the FAS founders was for nuclear materials and technology to fall under international supervision. What is your advice to improve the international nuclear nonproliferation system?

I consider that the International Atomic Energy Agency (IAEA) has done a very useful and competent job for many years in supervising nuclear technology and materials. They have done especially well in negotiating compromises with governments that are not fully cooperative. The original FAS program of full international ownership of nuclear facilities failed, and instead we have a program of compromises that works pretty well. The FAS should support IAEA and not make unrealistic demands for more intrusive supervision.

What can FAS do to improve the nuclear non-proliferation system?

To improve the nuclear non-proliferation system, FAS should concentrate on the U.S. weapons program over which we have some influence, and stop concentrating on countries such as Iran and North Korea over which we have no influence. We should fight for a U.S. no-first-use policy, and for drastic reductions in U.S. nuclear weapons. We should hold up South Africa as a good example for the rest of the world to follow. (Editor's note: South Africa is the only country to have dismantled a nuclear weapons program.)

I am not saying that we should not work on the problems of nuclear weaponry in Iran and North Korea. Obviously we should try to understand and to influence what is going on in these countries. But we should put far more effort and urgency into the problems of our own weapons, which are a bigger threat to the planet. They are useless for any sane military purpose and they are within our power to reduce or abolish if we have the will to do so. An unconditional No First Use policy should be a priority objective for FAS to pursue.

What is your most striking recollection as FAS Chair in 1962?

My main concern as FAS Chairman in 1962 was to persuade the FAS Council to adopt a strong public statement advocating No First Use. Our vote occurred at a meeting in New York in January while a record-making blizzard raged outside. The statement was approved by the FAS Council. The next day, the newspapers were full of stories of the blizzard and did not mention No First Use. I did not succeed in making No First Use a question for serious public debate. I still think that No First Use must be a key part of any program for decreasing reliance on nuclear weapons.

In 2007, George Shultz, William Perry, Henry Kissinger, and Sam Nunn published an op-ed in the Wall Street Journal that called for a global consensus to prevent the proliferation of nuclear weapons and eliminate them from the world. Do you think a goal of zero nuclear weapons is feasible? Why or why not?

It is important to understand that the phrase “zero nuclear weapons” has two very different meanings. It can mean “physical zero” or it can mean “legal zero.” Physical zero means that there are no nuclear weapons anywhere. Legal zero means that nuclear weapons are legally prohibited; there is no open deployment of nuclear weapons, but there is no assurance that the Israelis or the Russians do not have some nuclear weapons hidden away. In my opinion the goal of physical zero is unfeasible and unwise. It demands a verification system so intrusive that it would be politically unacceptable. Too much verification is likely to lead to frequent false alarms and consequent instability. In my opinion, the goal of legal zero is feasible and also preferable. Legal zero should be the goal for FAS. Legal zero is the situation achieved by the existing biological weapons convention, and it would be a good model for nuclear weapons too.

This year the U.S. is retiring its space shuttle program. As a leader of Project Orion, what are your thoughts on present U.S. space policy?

Space policy is a big subject. Project Orion has nothing to do with present-day problems. Project Orion intended to explore planets in 19th century style, like Darwin exploring the Galapagos Islands. The 21st century will have unmanned missions doing the job much better with vastly smaller payloads and greater outreach. I strongly support the NASA policy of retiring the shuttle and replacing it with new manned launch systems developed by private companies.

The manned space program should be honestly promoted to the public as an international sporting event. It should not be misrepresented as a science program. The public is willing to pay a lot for sporting events. Meanwhile, the science program should continue with unmanned missions and steady funding.

How would you advise the United States in terms of its investment in technology? Where should the U.S. focus its R&D funding?

The main problem with U.S. government investment in technology has been the excessive support for big projects such as the National Ignition Facility (NIF) and the International Space Station (ISS) and neglect of small projects. In the political competition for funds, big projects tend to win

regardless of their merits, because they provide more jobs. FAS should fight for a balanced program with roughly equal total budgets for small and large projects. The government should avoid “picking winners” among the small projects.

The question “where should the U.S. be focusing its R&D money?” makes the wrong assumption that focusing is good. I believe that focusing is bad because it implies picking winners. We should not be focusing our money on narrow objectives. Broad support for a variety of fields and a variety of small enterprises should be our goal.

At the United Nations Climate Change Conference in Cancun, Mexico, Dr. Hasan Mahmud, Bangladesh’s State Minister for Environment and Forests, stated that skeptics need look no further than his nation to see climate change in action. What are your thoughts on climate change?

Concerning climate change, I should first tell you that *The Atlantic* article by Kenneth Brower seriously misrepresents my views. He did not interview me and he did not give me a chance to see the article before it was published.

It is true that I am highly skeptical about the claimed understanding of climate change. Of course I do not deny that climate change is happening. I am skeptical of any claims that we understand it or that we can predict it or that we know what to do about it. Unfortunately the public debate on this subject has become highly political. I would strongly urge that FAS stay out of the debate as much as possible. It is a distraction from more important problems, such as nuclear weapons and public education and the regulation of biotechnology, where the competence and the influence of FAS is greater.

What issues should FAS tackle in the next 65 years?

I do not have any brilliant suggestions for the activities of FAS during the next 65 years. I would maintain the goal of reducing nuclear weapons to legal zero as the chief concern of FAS. This goal might well take 65 years to achieve, or it might be achieved much sooner. The most important changes that will happen are likely to be unpredictable. I believe that unilateral moves to abolish weapons will be more effective than multilateral negotiations in reaching the goal. Unilateral moves do not need ratification by the U.S. Senate, and they do not need to be coupled with complicated verification systems. Unilateral discarding of weapons is the best way to show the world that we do not consider them essential to our security. I urge FAS to give serious attention to unilateral moves as the key to a better future. ■