

those working on greater levels of intelligence today. There are those engaged in silicon chip engineering who are creating more intelligent machines all the time. And there will come a time when the silicon chip-driven machines rival humans in intelligence.

There are genetic engineers mapping the human genome and within a few decades they may be in a position to create a more intelligent human being, perhaps one that could have dealt with all of the topics confronting this Congress with greater wisdom than I have been able to muster.

There are those dealing with nanotechnology, technology where things are manipulated at the atomic and molecular levels, technologies that offer a chance to engineer either from biological materials or from electronic materials or from a combination of the two a level of intelligence way beyond today's computers, way beyond today's animals, and perhaps way beyond today's humans.

Speaking of intelligent humans, on August 7, 1939, Albert Einstein wrote to President Roosevelt and brought to his attention clearly and crisply the importance that nuclear technology might have for the future of the world. In just a few years, that nuclear technology literally exploded. What was the high and unusual science of 1939 became the public policy issue of 1945 and beyond.

We today are still wrestling with the political, the international, and the ethical issues of nuclear power and, of course, nuclear weapons.

Would it not have been great if we had gotten a bit more of a head start? Would it not have been good for humankind if the scientists had come to us 20 or 30 years before the nuclear weapons were created and told the world's political leaders that the genie will soon be leaving the bottle and it is time to develop a code of ethics and central understandings that will fit the new technology?

□ 2145

Now, some more than 50 years after nuclear weapons, we are still struggling with the ethical issues that they create. Well, I do not know how many years we have before what I refer to as remembered intelligence poses even more severe ethical issues for us than nuclear weapons do.

Let me bring a few of them to our attention. I know this may sound like science fiction today, but I do not think anyone familiar with science would say that these are not real possibilities. I am not saying this decade, maybe not next decade, maybe not in the lifetime of those of us who have lost our hair, but certainly within the lifetime of some of the younger folks in the back of the room.

First, we will see genetic engineering that will either create or offer to cre-

ate our slaves or our masters. Today dogs are a man's and woman's best friend. They are great pets, and a few of them are engaged in work, shepherding sheep, for example. Today's dogs have been bred, not genetically engineered, just bred to be friendly, docile, and obedient.

There are a few who think it raises ethical issues, but most of us view a dog's intelligence as below that of self-awareness and consciousness and are quite happy to have dogs that are obedient, docile.

But what happens when the genetic engineers start developing more intelligent canines? What happens when we start having dogs as intelligent or more intelligent than apes? Fortunately, I do not think we are going to face this issue in the next decade. But we are going to face it this century, and we are probably going to face it before we figure out what to do with it.

At what point must we recognize other life forms as being protected by our Constitution? How intelligent must a genetically engineered animal be to be worthy of our protection and respect? I do not know.

Likewise, we have seen many science fiction shows where scientists start with human DNA and deliberately try to create a being that is less intelligent or simply more docile than the average human form, and we are told to imagine a race invented for slavery. I think all of us recoil at the ethics of that.

But will we recoil with the same level of revulsion if the nearly as intelligent as human or perhaps as intelligent as human docile race is engineered from canine DNA or simian DNA, perhaps someday if we are not careful, human DNA? But not only may there be genetic engineering that invents those entities which some would wish to enslave, genetic engineering, whether it starts with simian DNA or human DNA, could very well invent a level of intelligence well beyond that of any of us here, perhaps even beyond that of the Albert Einstein I quoted earlier. Then how should human kind react?

That which can be done with genetic engineering may also be done with silicon chip engineering. A book I have not had a chance to read bears the interesting title the Age of Spiritual Machines. How many decades is it before the computer screen lights up with the question, am I alive? Why am I here? Should there be any ethical limitations on creating computers with intelligence, not just to balance our checkbooks or to figure the trajectory of the rocket, but computers intelligent enough to ask the spiritual questions? I do not know. I do know that it will take a panel of Einsteins to give us some guidance as to what our laws should be. This is going to be a tough issue.

I am going to propose probably next Congress, if I am fortunate enough to

be here, if there is interest by some of my colleagues, perhaps we could work on it this month or next month, that we create a national commission on the ethics of engineered intelligence to try to give some guidance to those lawmakers that will come after us in dealing with the issues of silicon or carbon-based intelligence that approach or exceed that of today's human being.

I do not know how to deal with these issues. It is a tradition in this town that, when one does not know what to do, one creates a commission. There is also a tradition in this town to wait till the last minute, to wait till some development is going to impair jobs in our own districts before we get serious about the issue. I would say that these are issues, and there are others as well that we ought to try to tackle at least at the thinking stage at the earliest possible time.

---

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF H.R. 4576, DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2001

Ms. PRYCE of Ohio, from the Committee on Rules, submitted a privileged report (Rept. No. 106-652) on the resolution (H. Res. 514) providing for consideration of the bill (H.R. 4576) making appropriations for the Department of Defense for the fiscal year ending September 30, 2001, and for other purposes, which was referred to the House Calendar and ordered to be printed.

---

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF H.R. 4577, DEPARTMENTS OF LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION, AND RELATED AGENCIES APPROPRIATION BILL, 2001

Ms. PRYCE of Ohio, from the Committee on Rules, submitted a privileged report (Rept. No. 106-653) on the resolution (H. Res. 515) providing for consideration of the bill (H.R. 4577) making appropriations for the Departments of Labor, Health and Human Services, and Education, and related agencies for the fiscal year ending September 30, 2001, and for other purposes, which was referred to the House Calendar and ordered to be printed.

---

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF H.R. 3605, SAN RAFAEL LEGACY DISTRICT AND NATIONAL CONSERVATION ACT

Ms. PRYCE of Ohio, from the Committee on Rules, submitted a privileged report (Rept. No. 106-654) on the resolution (H. Res. 516) providing for consideration of the bill (H.R. 3605) to