



nuclear technologies. Now we lag far behind.

Second: The shortage of medical isotopes has been a known problem (really a disgrace) for decades. Every single government study has recommended plans to domestically produce an isotope supply. Now we get more words. An Administration intent on solving this problem would reopen the FFTF to produce isotopes, and stop the burial of the so-called waste from Shippingport and the ORNL breeder, and use this material to make valuable isotopes. Instead, this Administration focusses on avoiding “proliferation”—a bogus issue to cover for anti-nuclear policies.

Third, it does not take a rocket scientist to figure out that setting up a committee, especially one without experienced nuclear scientists on it, to study something that has been studied for decades is simply a public relations effort to avoid taking action.

Words and promises are not what built the TVA or what got us to the Moon. Those programs were funded at the levels necessary to get the job done—even when the solutions were not yet known. There was a clear recognition that man has the creativity to solve any problem. The funds were allocated because these were national missions that required long-term support, science-drivers to move the entire economy forward.

In 1958, when South Korea was devastated by years of war and its people were literally starving in the dark and cold, American Walker Cisler, a nuclear pioneer, advised Korea's President to invest scarce funds in a science driver—nuclear power—that would not pay off for at least two decades. Dr. Syngman Rhee listened to Cisler, and 20 years later, Korea's first nuclear plant came on line. Now South Korea has 20 nuclear plants, a fast breeder in the works, and is a prosperous nuclear exporter. And Cisler's America? We are pouring billions into so-called “green” projects that will run our economy into the dust.

Cui bono? Not the American people.

What has to be done to achieve the kind of leap that South Korea made, and that this nation has made in the past, is not mysterious. We know what to do. It requires a political will that is entirely absent from John Holdren's letter of words.

—Marjorie Mazel Hecht

* The full text and list of signers to the letter to John Holdren can be found here: see http://www.21stcenturysciencetech.com/Articles_2010/Nuclear_letter.pdf

The text of John Holdren's reply is here: http://www.21stcenturysciencetech.com/Articles_2010/John%20Holdren.pdf

Those interested in signing the nuclear letter, should contact the corresponding author, John Shanahan.



Can Machines Think?

To the Editor:

I was wondering if you could comment on Ray Kurzweil's view that the exponential progression in machine computing ability will, within 20 to 40 years, result in thinking-capable machines which will express their own desire to expand consciously, and physically, into the universe?

Such a situation would essentially mean the end of human civilization, and biological life generally, as the machines would consume the resources necessary to their survival, indiscriminately, including incorporating human consciousnesses (how many?) into its systems.

Without saying it (or likely knowing it), Kurzweil also argues that this would simply represent the next higher-level phase space in the anti-entropic behavior of the universe, à la the Vernadskian progression from the Lithosphere to Biosphere to Noösphere. The next level will be the Mechosphere, capable of transforming and otherwise utilizing the raw resources of the universe at many quantum leaps of efficiency and energy flux densities over biological capabilities, including the biological limitations on consciousness and information processing, and creativity.

If the historical anti-entropic behavior of the creative actions of the universe is a precedent, then this outcome is inevitable and humanity's existence will simply be a “cog in the wheel,” so to speak, of this developmental process, just as how today, organisms which have lived over the eons in the past have provided for humanity's ability to develop; our function in this universal process may one day fulfill its purpose.

Something I think Kurzweil takes too for-granted is the human element required in mechanistic technology. Modern computers *do not* function with less

(Continued on p. 6)

Letters

(Continued from p. 3)

human involvement in their operation and production compared to computers of the past, as fundamentally required under Kurzweil's view. However, I suppose his response to that would simply be: "Not yet."

Of course the moral (and, the demoralization campaign of the Empire) aspects of this issue are of paramount importance to a view of humanity.

If you could, please comment.

**Joseph Edwin Postma,
Astrophysicist**

Lyndon H. LaRouche Replies: 'No Machine Will Ever Think'

Contrary to such fanatical followers of Bertrand Russell as the Norbert Wiener and John von Neumann who were thrown out of Göttingen by David Hilbert, no machine will ever actually think.

There are two approaches to the design of calculating machinery which could be considered under that subject-heading. Mechanical machines in the conventional sense, and, secondly, those in which a living biological process complements the mechanical, or mechanical-like. Under those conditions, we have defined the domain of "robotics," but not, for example, Classical poetry. A robot might be designed to function as a sex-machine, but would never be capable of love.

A debate of the sort to which you refer, arises when the noetic processes specific to the human mind, as illustrated by the work of V.I. Vernadsky on the "Noösphere" and also, so very neatly, by the concluding sentence of Bernhard Riemann's 1854 habilitation dissertation, are ignored.

"Machines" are specific to the domain of mathematics; the human design of machines, belongs to the domain of the practice of original discoveries of universal principles expressed as physical science, not by the Lithosphere, nor the Biosphere, but only by mankind—or, better said, by the natural potential of mankind.

In reply to questions of the type to which you refer, I refer to the case of Albert Einstein's cognitive kinship with his violin. Human creativity lodges within the domain associated with the powers of the Classical artistic imagination, as

Johannes Kepler uses the inconsistency between the human senses of sight and harmonics, to discover what Einstein defines, respecting the universal principle of gravitation, as a finite, but unbounded universe.

The question you present arises in modern practice through, chiefly, that influence of Paolo Sarpi and his follower Abbé Antonio S. Conti, who defined the behaviorist principle of such as John Locke, Adam Smith, and Jeremy Bentham and their modern radically reductionist school. A valid discovery of a universal physical principle lies outside the bounds of the Lithosphere and Biosphere, in the domain of the Classical artistic imagination, whence the noetic powers of the developed human mind discovers the existence of principle as the means of escape from bestial-like ignorance. It has been, thus, the rise of existentialism in respect to Classical artistic insight, as in the Bertrand Russell version of the modern positivist school in modern mathematical practice, which has done so much to destroy scientific creativity, since 1945.

The Lies of Rachel Carson

To the Editor:

The author [Dr. J. Gordon Edwards in "The Lies of Rachel Carson, 21st Century, Summer 1992, <http://www.21stcenturysciencetech.com/articles/summ02/Carson.html>] makes a mathematical inconsistency in the argument below:

"Rudd and Genelly state in *The Condor* (March 1955): This value is equivalent to 15,000 parts per million DDT in the diet.

"This amount represents the highest dosage of DDT I have ever heard of in any experimental animal, and I cannot understand why they would use such an extreme concentration. This means that 15 percent of every bite of food was poison."

The transition of 15,000 ppm is 1.5 percent not 15 percent:

$$1.5 \times 10^4 \times 100 / (1 \times 10^6) = 1.5 \text{ percent.}$$

15 percent equals 150,000 ppm.

Anthony Rajki

Marjorie Hecht Replies

You are quite right in the math; the amount should be 1.5 percent, not 15 percent. I suspect that this must have

been an editorial error, rather than the author's, in misplacing the decimal point. Edwards (now deceased) was really meticulous in his work, and never to my knowledge made an error.

Now, for the amount itself: Even the 1.5 percent in an animal study would



have been very large. Here's what Dr. Alice Ottoboni, an experienced animal researcher, wrote when I sent her the Edwards article and Mr. Rajki's inquiry:

"Thank you for sending the link—great article. Like you, I have never found Gordon to even exaggerate, much less err. However, Mr. Rajki is correct, 15,000 ppm is equal to 1.5 percent.

"I can only assume that the "15 percent" was a typographical error in Gordon's draft that he did not catch. I know that he would have known better. He was correct, though, about it being the highest he had ever heard of in animal testing—even at 1.5 percent.

"In our four-generation study of reproduction in Beagle dogs, the highest level fed was 10 mg/kg which would equate to not quite 0.2 percent DDT in a human diet (70 kg man \times 10mg/kg = 700 mg DDT: approximate daily food intake about 1 pound = 454 grams: 0.7 g/ 454 g = 0.00154 = 0.15 percent). We chose 10mg/kg as the highest level because we expected it to produce some overt toxicity. Instead of adverse effects, we found all of the dogs on the high level to be as healthy—or more so in some parameters—than the controls (Ottoboni, Bissell, Hexter. 'Effects of DDT in multiple generations of Beagle dogs.' *Arch Environ Contam Toxicol*. 1977, Vol. 6, pp. 83-101)."