

Fall issue of '21st Century Science': Real calculus vs. what you learned

by Laurence Hecht

A devastating critique of the standard method of mathematics teaching is the lead article in the Fall 1999 issue of *21st Century Science & Technology* magazine, a quarterly publication which continues the tradition of *Fusion*, the magazine of the Fusion Energy Foundation founded by Lyndon H. LaRouche, Jr. in 1974.

LaRouche's fundamental discovery in economic science, achieved in the 1948-1950 period, established among other results, that no formal mathematical system can represent a process of universal change, such as that embodied in economic progress. Attempts at mathematical modelling of economies, for example, have invariably been unable to deal with the problem that any new fundamental discovery in science, when introduced into the economy through new machinery and technological innovation in production, changes at once all of the existing relationships of the economy, eliminating whole categories of products and means of production, and creating new ones. The same is true, as well, of any process of change in the universe, including biological growth, and even non-living physical systems, such as light propagation, electricity, or chemical interactions.

The current, accepted method of teaching of mathematics, even at the higher levels, has ignored this principle, rediscovered and advanced by LaRouche, which was the method used by the actual inventor of the calculus, Gottfried Leibniz (1646-1716). Leibniz's discovery has been suppressed, and a fraudulent version presented in its place. Far from being a simplification, the fraudulent version is generally incomprehensible, and amounts to a "brainwashing" of the student who feels compelled to learn it in order to pass his exams, and advance his career.

The new, revised version of the calculus, is based on the so-called "limit theorem," of the French pro-Newtonian, Augustin Cauchy,

Cauchy was part of a faction in early-19th-century France, then the leading scientific nation in the world, who were committed to proving that all physical phenomena could be reduced to mathematical expressions involving the assumption of forces of attraction or repulsion acting between presumed "elementary particles." The great physicists André-Marie

Ampère and Augustin Fresnel had proved them absolutely wrong, in their own terms, by their pioneering discoveries in the science of electricity and optics, respectively. But this did not stop the faction of LaPlace, Biot, and Cauchy from continuing to insist on their ideological delusion—a delusion which has continued into the present day, and constitutes the prevailing opinion in all university mathematics and science departments throughout the world.

Ernest Schapiro, author of the *21st Century* cover story headlined "The Real Calculus vs. What You Learned," has exposed this long-lived fraud, by going back to Leibniz's original writings. Reading though Leibniz's vivid descriptions of his own discovery, Schapiro discovered that Leibniz's invention of the calculus was only possible because of his philosophical standpoint premised on the *non-reducibility* of natural phenomena to the actions of assumed elementary particles in pairwise interactions with one another (in short, the flawed Newtonian universe).

The 'American System' of calculus

It also turns out that the leading contemporary defender of Leibniz's discovery—which came under such vicious attack from the British propaganda machine that Leibniz, who had been in line to be a prime minister of Britain under the succession of Princess Sophia, died a few years later in poverty and ignominy—was the mentor of Benjamin Franklin, the great Philadelphian James Logan. Logan was the first to call the so-called "calculus" of Newton a *political* fraud, invented to discredit Leibniz's influence in Britain and likely succession to a ministership. The irony that America's current leadership in world science has made it the world leader in promoting the Cauchy fraud, is addressed in an editorial in the issue, entitled "Return to the 'American System' of Calculus."

The same philosophical problem, which infects all Americans, whether or not they ever took a calculus course, is addressed in a different way in the *Pedagogy* department of the magazine, in a provocative short piece entitled "Predictions Are Always Wrong." Here, Phil Rubinstein, a leading organizer of LaRouche's political movement in the

United States, shows that the difficulty many Americans have in distinguishing between LaRouche's economic forecasts and mere economic "predictions," stems from a philosophical belief in "linearity," which is precisely the same as the Newton-LaPlace-Cauchy view of the calculus. He shows that Plato's great enemy, Aristotle, embodied this view, which denies the logical possibility of *change*—whether it be in matter, or in the human mind (creativity)—in his formal system of thought.

Gravitation theory challenged

The issue also contains an extraordinary contribution by Prof. Shu-wen Zhou of China's Huazhong University of Science and Technology, who discusses his several years of experimental work on the measurable, abnormal effects on force and time measurements that occur around the time of solar and lunar eclipse, a challenge to standard thinking on gravitation. Also featured is a translation of a 1943 article by the Russian biologist Alexander Gurwitsch and his wife, Lydia, which reviews his discovery of mitogenetic radiation and answers the complaints of his reductionist critics. The Gurwitsches discuss how the discovery came about, and what they were thinking in the process.

The Special Report is on AIDS in Africa, and includes an update on work on an AIDS virus by Colin Lowry, a report on the pandemic, and an interview with the head of the White House Office of National AIDS Policy.

The nuclear report leads with Zbigniew Jaworowski on the absurdity of the concept of "collective dose" in measuring radiation fallout.

In a second article, food irradiation pioneer James H. Steele, professor emeritus at the University of Texas, discusses the history of food irradiation and the need for public health officials to start supporting it.

An Ancient Discovery section features dramatic color photographs of the 20-40,000-year-old rock art of northwest Australia's Kimberleys. Other articles include a viewpoint by senior entomologist Gordon Edwards on how the Food Quality Protection Act is bad for your health, and reports on the Japanese fusion program. The Books section includes a review of Cornell astrophysicist Thomas Gold's book, which argues that hydrocarbon fuels aren't fossils; a review of the life and ideology of Lysenko, a review of a book on Micronesia's lost cities; and a review of the biography of Sergei Korolev, the almost unknown Ukrainian genius who played the role of Werner von Braun for the Soviet space program.

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Mahathir rallies Asia to build economy

by EIR Staff

Malaysian Prime Minister Dr. Mahathir bin Mohamad is carrying out an intensive organizing effort to get other Asian countries to play a vigorous role in protecting their economies from the International Monetary Fund (IMF) and the financial speculators, as well as in moving into the 21st century as nations strong in science and technology.

At the same time, the Malaysian government has presented its Y2000 budget, reaffirming the success of the protective measures introduced in September 1998, including capital and currency controls.

Diplomacy

At a conference of the **Africa Asia Business Forum** in Kuala Lumpur on Oct. 16-19, Dr. Mahathir addressed 350 business executives from 28 African and Asian countries, declaring that now is the time for Asia, "with its fresh experience, new-found wealth, technology, and skills, to help other less-developed nations." He urged public and private sectors in Africa and Asia to form "smart partnerships" for mutual benefit. Both regions had, for too long, been Eurocentric, and he encouraged Africa to look for friends in Asia and the Americas, who would understand African development problems better than more developed countries. He said that if Asian countries became genuine partners of Africa, "it will create a cycle of prosperity." He further stressed the importance of political stability, not just changes of government, in creating conditions conducive for development.

On Oct. 30, Dr. Mahathir and Thailand's Prime Minister Chuan Leekpai signed an agreement on joint development of natural gas reserves, in areas where the two countries have overlapping territorial claims. The **Malaysia-Thailand Joint Development Area (MTJDA)** covers 7,250 square kilometers offshore, about 260 km from Songkhla, Thailand and 150 km from Kota Baru, Malaysia. The fields will be exploited for mutual benefit, with expenses and profits shared equally.

On the same day, Dr. Mahathir participated in Kuala Lumpur in the signing of a gas sales agreement between Malaysia's Petronas and the Thai petroleum authority PTT. On that occasion, he stressed the peace-making function of such projects as the MTJDA, which would, he said, "stand out in history as a testament to the unique cross-border cooperation between two neighboring countries in resolving territorial disputes and the ability of both countries to utilize jointly and equitably the