TRAJECTORIES

Newsletter of The Institute for the Study of the Human Future

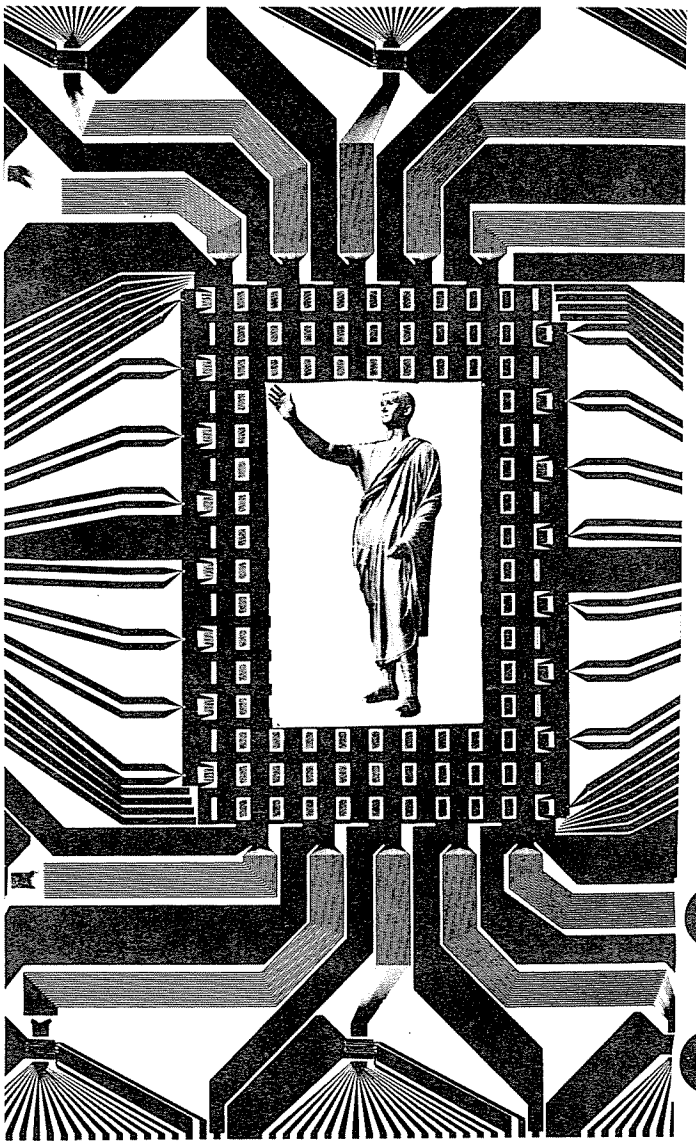
Arlen Wilson, Ph.D., President

Humanity is designed for total success in Universe.
—R. Buckminster Fuller

If a man thinks so he is limited.
—Hazrat Inayat Khan

Editor—ROBERT ANTON WILSON, Ph.D.

March 1982



MICROS

MARVELS

MYSTERIES . . .

QUO VADIMUS

COMPUTERATI?

IMMORTALITY THROUGH SILICON

and Other Weirdness

by Robert Anton Wilson, Ph.D.

As most of you know, Dr. Robert Jastrow of NASA's Institute for Space Studies is a sober, sensible scientist; he is not a science-fiction writer or a wild-eyed Futurist (like me.) Nonetheless, Dr. Jastrow's new book,

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GOOD/EVIL MICROMAGIC

The Last Sci-Fi Novel

by Dean Gengle

It is the future. The Whole Earth is viewed, by a majority of its conscious inhabitants, as a single, unified Living System. In one of its aspects, this Living System is called Gaia, after the Earth Goddess of ancient

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KIDS, TEENS and COMPUTERS

Cheaper Than Cars And a Lot Safer

by Samuel B. Bassett

C. P. Snow drew a distinction between the "Two Cultures" of the Artist and the Scientist, pointing out that each operates within his or her own framework, and generally comprehends neither the work nor

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IMMORTALITY

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The Enchanted Loom: Mind in the Universe (Simon and Schuster, 1981) concludes that it is our destiny to achieve immortality by *becoming* computers.

Jastrow points out that some computers have already learned to decipher a few of the brain's signals, and can tell if a human is excited or elated, or even distinguish if he/she is looking at a circle or a square. Eventually, Jastrow says, computers will be able to contain a human mind: "... a bold scientist will be able to tap the contents of his mind and transfer them into the metallic lattices of a computer. Because mind is the essence of being, it can be said that this scientist has entered the computer, and that he now dwells in it."

Jastrow summarizes: "The union of mind and machine has created a new form of existence, as well designed for life in the future as man is designed for life on the African savanna. It seems to me this must be the mature form of intelligent life in the Universe. Housed in indestructible lattices of silicon, and no longer constrained by the life and death cycle of a biological organism, such a kind of life could live forever."

* * *

In the last issue, we had a typographical error that is worth correcting. In discussing Bell's Theorum—which suggests the possibility of non-local causality (causality not limited by space and time)—we mentioned that three physicists are already working on practical applications of this idea, with the hope of producing faster-than-light communication systems. At this point, the glitches got into the typesetting. What we wrote but the readers did not see was as follows:

In a recent paper, Dr. Nick Herbert reviews three attempts to construct faster-than-light communications systems based on Bell. Herbert argues that all three contain internal contradictions and are unworkable. The amusing result of this, however, is that, after circulating this paper, Dr. Herbert heard from several others who are working on alternative faster-than-light communication systems. He now says there are new FTL systems (theoretical only) popping up in Physics Departments all over the country.

Of course, *all* of these may be unworkable ... but if even one of them works, we will confront all the paradoxes of time-travel. Information traveling faster than light creates exactly the same philosophical puzzles as the sci-fi story about the man going back in time to change history.*

* * *

Life Extension update:

- Russian scientists recently claimed that aging can be slowed and people can live in good health up to 120. A program on "Prolongation of Life" is now sponsored by the Academy of Sciences, according to *Tass*, and directed by geneticist Nikolai Dubnin.
- Sen. Alan Cranston (D-CA) is urging that the United States sponsor a similar life-extension program.
- Encouraged by the growing pace of anti-aging research, Prof. Albert Rosenfeld (author of *Prolongevity*) says he has a million dollar bet with a friend that they will both be alive a hundred years from now.

* * *

So-called "out-of-body experience" has been studied a great deal in recent years, and was the subject of a very fine film, *Resurrection* (with Ellen Burstyn). A recent survey by psychiatrist Stuart Tremlow shows that the effect of such experience on the individual is rather paradoxical. In most cases, religious affiliation *declines*—Roman Catholic affiliation declined from 19 percent to 9 percent in a group who had had the experience, Protestant affiliation dropped from 65 percent to 48 percent, and non-affiliation with any church *rose* from three to six percent.

Affiliation with "unusual" or Oriental religions, however, increased from 13 percent to 26 percent.

* Special Relativity "forbids" faster than light *signals*. Those who think Bell's Theorum allows FTL say that information does not always require *signals*. For a discussion of their arguments, see Zarov, *The Dancing Wu Li Masters*; Talbot, *Mysticism and Modern Physics*; and Wilson, *Illuminati Papers*.

Robert Anton Wilson is the author of Illuminatus, Schrodinger's Cat, Cosmic Trigger *and numerous other books and articles on scientific topics.*

GOOD/EVIL

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Greece. Most of Gaia's processes, like those of the human psyche, are unconscious as the story begins. As it unfolds, however, the drama becomes, increasingly, a drama of the unconsious becoming conscious. Just as human beings, through such things as biofeedback, had learned to affect their own "autonomic" processes, so more ways were discovered to help make Gaia's processes transparent to Mind.

Those ways become part of a global human culture. Gaia's emerging nervous system—a set of human artifacts—is not only a repository of human culture, but a synthesizer of human culture as well. Information about human impacts on Mother Earth is fed back into human institutions and subsystems so that corrective action can be taken. For humans, the first manifestation of this phenomenon was felt in the area of weather monitoring and prediction.

Professors began to write books with strange titles such as *The Neuroanatomy of Mother Gaia*, and *The Electronic Magazine as Nerve Cell*. Mother Gaia's neuroanatomy consists, the professors said, of the telecommunications grid and its connected component systems. Human/computer nodes (contelligent subsystems) are now distributed over the face of the globe, they said. They measured the size of these nodes or "nerve nuclei" in terms of information processing power. Sometimes that came down to memory capacities, CPU operating frequencies and "instructions-per-nanosecond" ratings.

At the heart of *The Last Sci-Fi Novel* is the story of a global psychic battle that spills over into intergalactic space. The battle is joined between good magicians and bad magicians over control of the synergetic cybernetic technologies. The issue at question is quite simple: will Mother Gaia's "master brain power" be concentrated in one geographical/spatial location, in a few human hands, for the profit of a few? Or will it be accessible, hence distributed, over the face of humanity, putting greater powers into more hands than ever before?

The special-interest magazine, born during the early days of offset printing technology, was one of the first kinds of organizations to go electronic, putting its contents on-line for computer-to-computer access. However, other media were also becoming digitized at a faster and faster rate, so that, soon, the same electronic grid—Mother Gaia's neurosphere—carried words, pictures, sounds and other humanly sensible and non-humanly-sensible signals. Increasingly, human beings began to form living-working environments that were totally connected to the communications grids, yet totally autonomous in their operation and control. Bioregionalism became the overriding organizing principle championed by the good magicians to go hand-in-hand with the distribution of microprocessing power.

Microcircuitry design became both a pastime and a necessity for large numbers of people who had no electronics experience to speak of. These people were able, through the use of sophisticated computer assisted design programs, to specify what kind of microchip they wanted. Eventually, a final breakthrough in design allowed the creation of "Semipermeable Multi-media Information Membranes" (SMIM). These devices turned out to be a decisive factor in the cybernetic wars, especially as techno-anarchists discovered more and more clever ways to design microchips. One result was a system that was totally user-programmable, that sought out only those signals (information) wanted by the individual designer(s). Likewise, the SMIMs were capable of transmitting information, generated by the individual controller, to others—at will. These developments tipped the scales in favor of mass distribution of enormous information/power.

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GOOD/EVIL

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Early micros—circa 1980-85—were forerunners of these SMIMs. (A humorous motto of the day was "Think and/or SMIM.") As individual nerve cells came on-line and attached themselves to Mother Gaia's emerging brain, they found themselves eventually having to choose sides between the good magicians and the bad magicians. The novel begins in the '40s and ends at the turn of the century. Does Gaia opt for self-preservation? I wouldn't want to give away the ending.

Dean Gengle is an associate of ISHF.

COSMIC PLASMA

In his recent book by this title Nobel Laureate in physics, Hannes Alfven, surmises that the entire universe is composed of a multicellular structure crudely similar to a single living organism. The cosmos may be divided up into cells separated by immense "walls" of interstellar electrical currents. The initial actualization of Alfven's theoretical work will entail sending space craft into deep space to measure carefully the changes in electrical currents which he believes denote the "cell wall" separating our solar system from the nearest star.

ISHF

A WORD TO THE WISE

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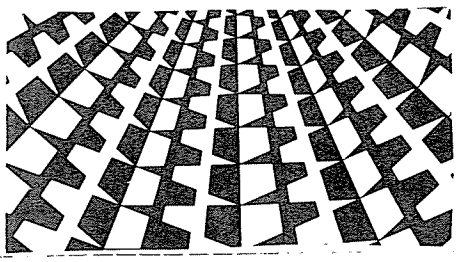

KIDS, TEENS

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the worldview of the other.

His observation is generally true for people I know who were born before 1960, although I know more "innumerate" and "uncalculating" artists than I know "illiterate" and "artless" scientists.

For people born after 1960, and especially those born after 1965, I find, in general, a very different attitude about the supposed dichotomy between art and science. They seldom see it.

They have grown up with *Star Trek*, *Star Wars*, and the technical pyrotechnics of television and Disneyland—and absorbed the idea that they can create something beautiful, exciting, and almost alive by learning the intricacies of the machinery that makes it run.

In contrast, to my older, non-technical friends, computers are a mystery, often a somewhat malevolent one. I hear horror stories about dealings with the billing computer at such-and-such a store, or thus-and-so utility, often with clear overtones of paranoia—"THEY are out to get me."

My young friends, on the other hand (the younger, the more so) tend to look at computers as new, wonderful, and more powerful toys. They (and I, in reading Science Fiction) have grown up with both the idea that these machines are an ordinary part of life, and also with the downright nosiness and playfulness to want to get in on the fun.

Younger artists, too, are incorporating computers into their work—an author approached me as one of the "computerati" recently, described a visual effect she was using in her novel, and asked if it would be possible to produce this effect on a personal computer. I assured her that it was possible, and referred her to the "Graphics Gathering" of computer graphics enthusiasts who meet monthly at Stanford University.

George Lucas and the people at his Industrial Light & Magic Company have probably done more to bring computers into the arts than several generations of academics or advertisers could ever do—the sheer inventiveness and exposure of their filmed special effects have turned on the whole world.

The variety of ingenious additions to the basic microcomputer never ceases to amaze me—there are relatively inexpensive plug-ins for creating visual effects, professional-quality music, control machines, and so on, almost without number. Software to control these machines and to calculate effects is published far and wide.

As a prescription for being sure to bridge the perceived gap between the sciences and the arts in the next generation, I would urge parents to buy their children Video Games early—the training in hand-eye skills is valuable, and the programming is much better than what is on commercial TV.

When they get to be teenagers, I recommend that they be given a good micro-computer, and encouraged to buy and play the excellent games which are available. This is not only cheaper than an automobile, but a lot safer.

The experience of the Marin Computer Center, in Corte Madera, CA, has been that kids soon tire of playing with the simpler games, and take them apart to find out how to make them more interesting—teaching themselves programming in the process. No amount of cajolery, bribery, or threats could get them to put in so many hours of study and learning, but the sheer fun of it will!

The computer is a tool for the mind—an extension of human capability—in just the same way that a wrench or a lever is an extension of the hand. I look forward to the day when it is taken as much for granted, and everyone can share the joy of creating beautiful and intricate structures with it.

The scientific-minded, of course, will value them for their intricacy and subtlety, the artistic-minded for their beauty and expressiveness—but will the one be less intricate, or the other less expressive for all of that?

Samuel B. Bassett is a former editor of InfoWorld, *a microcomputer trade newspaper, who is now working as a freelance technical writer in Silicon Valley. His writing is done on an Apple][+ microcomputer, which is chock full of add-in boards, one of which is a telephone modem, which allows him to be active in the various information networks in the Bay Area and nationwide.*

JACQUARD UPDATE

A fashion institute in Toronto, Sheridan College, has its students designing knitwear via computer graphics. Once a design is approved a printout is made, punched onto a card, fed into an actual knitting machine and presto, out comes the sweater of your dreams. Soon any kind of look you want may be as close as your terminal—from Punk Panache to Disco Deco, from Total Preppie (Noblesse Oblige But Not Very Much) to Black Leather (Look Out You Turkeys), from the unmatched socks and drab discoordinates of the I'm-so-smart-I-don't-have-to-give-a-damn Incorrigible Hacker to the reserved three-piecer so reassuring to personnel departments. Or, if you already have a job, how about a black satin Dracula Cape for the boss?

THE SIX PROJECT STAGES

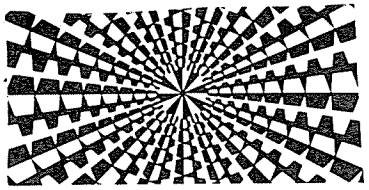
(Thanks to Janie Noble of Planetechnology)

Wild Enthusiasm, Disillusionment, Total Confusion, Search for the Guilty, Punishment of the Innocent, Promotion of the Nonparticipants.

A PIONEER FUTURIST

Marie-Jean Caritat, Marquis de Condorcet (1743-94), is usually described as the most outrageously optimistic of the French philosophers of the Age of Reason; many conservative writers use his name as a symbol of what they consider the naive "faith in Progress" typical of liberals. Amusingly, economist Burnham P. Beckwith has recently analyzed the 50 major predictions in Condorcet's The Progress of the Human Mind, and finds that Condorcet was right in almost all cases. Writing in the World Future Society Bulletin, Beckwith notes that Condorcet, a mathematician who specialized in probability theory, pioneered the same future-projection techniques generally used today and that a high percentage of his prophecies are now true in Capitalist nations, others in Socialist nations, some in both Capitalist and Socialist nations. A few of Condorcet's scannings have not come true yet, but seem more likely now than when he wrote (e.g., indefinite life extension).

Among Condorcet's major predictions: the industrial revolution would spread across the world; agriculture would become more productive; both private insurance companies (a novelty in his day) and government insurances (Welfare) would increase; education would cease to be a religious monopoly and become available to both sexes and all classes; student loans would be established for the poor; with more education, women would demand more equality; racism would be repudiated by the educated and later by all society; world-wide wealth would steadily increase with technological advance; contraception would limit family size and help abolish poverty; a world peace-keeping organization would eventually appear.



SWITCHBOARD

Trajectories *is published by ISHF (Institute for the Study of the Human Future) 2000 Center Street, Berkeley, CA 94704. Subscriptions are $10.00 for six issues. Make checks payable to ISHF.*

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