

PATTERNS

ASCD Systems Thinking and Chaos Theory Network Newsletter

March/April 2003

From the Editor:

As we put together this double issue of PATTERNS, the selected president of the USA has declared war on Iraq. We have an eerie feeling of disconnect as we watch our government, seemingly unconcerned by the disturbing lack of support from our traditional allies, flaunting the greatest show of military technology in our history titled, "shock and awe" mesmerizing world citizens on prime time television. Our government seems to be in a time warp. This pattern, designed to convince friend and enemy alike that global security lies in the iron fist of the strongest world power, has been tried before....unsuccessfully.

Today, we are seeing an unprecedented number of world citizens expressing the common-sense view that in our present complex society, social and environmental viability lies in keeping open as many options for action as the human imagination can make possible. This makes war obsolete since there are only two options__win or lose.

In this issue of PATTERNS we look at the emerging theories of complexity. Mathematician **Ralph Abraham** gives us a history of the development from the three roots in modern science; Cybernetics, General Systems Theory, and System Dynamics. We have taken excerpts from a text edited by **Alfonso Montuori** in the series, *Advances in Systems Theory, Complexity, and Human Sciences*. We also offer the scientific wisdom of evolutionary biologist **Elisabet Sahtouris** taking a wholistic view of the evolution of governance.

Another source of wisdom is HH The Dalai Lama who speaks from his

(continued on next page)

The Evolution of Governance

by *Elisabet Sahtouris*

What sort of governance makes sense in a complex global society? To consider that, we go back into deep time, before humans, before dinosaurs or insects, to a time when our microbial ancestors faced a global environmental crises of their own making.

Telling the story is Elisabet Sahtouris, Ph.D, an American/Greek evolutionary biologist, ecologist, futurist, consultant, and author of GAIA: The Human Journey from Chaos to Cosmos. She is a founding member of WISNet, the Worldwide Indigenous Science Network, a member of the Earth Parliament and of the Women's International Policy Action Committee on Environment and Development, among others.

The environmental crises brought on by our microscopic ancestors nearly destroyed them - but they found a way out, and we can, too

In studying the Earth's evolution, the most fascinating story I know is that of ancient beings who created an incredibly complex lifestyle, rife with technological successes such as electric motors, nuclear energy, DNA recombination and worldwide information systems. They also produced - and solved - devastating environmental and social crises and provided a wealth of lessons we would do well to consider.

This was not a Von Daniken scenario; the beings were not from outer space. They were our own minute but prolific forebears: ancient bacteria. In one of his popular science essays, Lewis Thomas, observing that the myriad of mitochondria in each of our own cells are descendants of these bacteria, suggested that we may be huge taxis they invented to get around in safely.

From whatever perspective we choose to define our relationship with them, it is clear we have now created the same crises they did some two billion years ago. Further, we are struggling to find the very solutions they arrived at - solutions that made our own evolution possible and that could now improve the prospects of our own far distant progeny, not to mention our more immediate future.

I owe my understanding of this remarkable tale to microbiologist **Lynn Margulis**, whose painstaking scientific sleuthing traced real events of a few billion years ago. The bacteria's remarkable technologies (all of which still exist among today's free-living bacteria) include the electric motor drive, which functioned by the attachment of a flagellum to a disk rotating in a magnetic field; the stockpiling of uranium in their colonies, perhaps to keep warm; and their worldwide communications and information system, based on the ability to exchange (recombine) DNA with each other.

Inside

Elisabet Sahtouris.....	p. 1
From the Editor.....	p. 1
Ralph Abraham.....	p. 4
Book Review/ Design.....	p. 6
Book Review/ Schools.....	p. 8
ISSS Crete Conference.....	p. 9
Robert Muller, World Dialogue.....	p.10
Compassion Becomes Dissent.....	p.12
Corrina McFarlane.....	p.14
Call for Public Dialogue.....	p.14
Economic Perspective.....	p.16
ASC Vienna Conference.....	p.17

(continued on next page)

own experience and that of his people as well as an ancient spiritual tradition. ***"Human suffering has been the culture of violence in resolving differences and conflicts. The challenge before us, therefore, is to make this new 21st century a century of dialogue when conflicts are resolved non-violently."***

In recent issues of PATTERNS (notably the January 2002 issue in which we explore the phenomenon of **The World Café**) we have noted the development of purposeful public dialogue through the **Agora Project** developed by the **International Society for the Systems Sciences (ISSS)** and the **International Systems Institute (ISI)** (see the index of issues at www.haven.net/patterns/) Our own personal involvement in **Women Rise** as a response to the anachronism of war involves the development of neighborhood conversations and the global interweaving of the use of the social technology of the internet. This is the beginning of a long term movement to change consciousness from war to creative society. It is a growing international network of people who recognize that in the words of the earlier American revolutionary **Tom Paine**, ***"The time has found us."*** (Check www.womenrise.org to find out more and join in for your gender-free heart's sake.) Like loving parents, lets take the dangerous toys away from the boys....

Emphasizing the increaing awareness of disconnect we share the following quote circulating on the net.

"Of course the people don't want war... That is understood. But after all, it is the leaders of the country who determine the policy, and it's always a simple matter to drag the people along whether it's a democracy, a fascist dictatorship, or a parliament, or a communist dictatorship. Voice or no voice, the people can always be brought to the bidding of the leaders. That is easy. All you have to do is tell them they are being attacked, and denounce the pacifists for lack of patriotism and exposing the coun-

Yet, like ourselves, with our own versions of such wondrous technologies, the ancient bacteria got themselves deeper and deeper into crisis by pursuing win/lose economics based on the reckless exploitation of nature and each other.

The amazing and inspirational part of the story is that entirely without benefit of brains, these nigh invisible yet highly inventive little creatures reorganized their destructively competitive lifestyle into one of creative cooperation.

Their crisis came about when food supplies were exhausted and relatively hi-tech respiring bacteria ("breathers" with electric motor drives) invaded larger more passive fermenting bacteria ("bubblers") to eat their insides out - a process I have called bacterial colonialism or imperialism. The invaders multiplied within these colonies until their resources were exhausted and all parties died. No doubt this happened countless times before they learned cooperation.

Somewhere along the line, the bloated bags of bacteria also included photosynthesizers, "bluegreens," which could replenish food supplies if the motoring breathers would push the enterprise up toward a lighter part of the primeval sea. Perhaps it was this lifesaving use of solar energy that initiated the shift to cooperation.

Perhaps it was this lifesaving use of solar energy that initiated the shift to cooperation.

In any case, bubblers, bluegreens, and breathers eventually contributed their unique capabilities to the common task of building a workable society. In time, each donated some of their "personal" DNA to the central resource library and information hub that became the nucleus of their collective enterprise: the huge (by bacterial standards) nucleated cells of which our own bodies and those of all Earth beings other than bacteria are composed.

This process of uniting disparate and competitive entities into a cooperative whole was repeated when nucleated cells aggregated into multi-celled creatures. Once these biological "governments" evolved, they continued to function beautifully. What nature's healthy bodies and ecosystems exemplify are beautifully unified democracies of diversity, organized by locally productive and mutually cooperative "bioregions," and coordinated by a centralized service government. The underlying and overriding motive is toward healthy production and consumption for all.

We humans, like the bacteria of old, have produced a major crisis. But humanity, like other living systems, is resilient and creative under stress. And we have the further advantage that we can see how other living systems have evolved and survived, and gain clues as to what we are doing dysfunctionally and what could set us on a path of viability.

To watch the world through the broad lens of an evolutionary biologist is to see signs of hope in many directions. Everywhere I look, people are "getting" the principles of living systems - they are recognizing that we cannot separate science, politics, economics, religion, art and education any longer.

At the Earth Summit in Rio last year, I told the tale of the ancient bacteria to my fellow "Wisdom Keepers," a group organized by Hanne Strong. I added that I'd long wondered exactly how the ancient bacteria did it, and that I was now extremely privileged to see the same process first hand, as witness and as participant.

However poorly reported in our media, most participants I spoke with felt the gathering was a critical event in the reorganization of humanity from a competitive, win/lose lifestyle to a worldwide, cooperative venture. Clearly, those involved in the people's summits, not the official proceedings, were leading the way.

The image of humanity reorganizing itself from a chaotic mass to a new order was especially vivid from the sound stage of the huge concert held on Flamengo Beach

under a brilliant eclipsing moon on our final night in Rio.

Looking out over the vast crowd on the beach, I watched circles form spontaneously in dance, then dissolve as others formed. Lines of people appeared and wove their way through the mass; great roars of approval greeted every proposal for a better world that was broadcast from the nuclear sound stage.

A giant cell was forming itself symbolically on that sandy beach, human proto-plasm in motion, making order out of chaos beneath the ever-changing watchful eye of the eclipsing full moon. Beams of laser light patterned their way from nucleus to the boundaries of the great cell lying between the glittering sea and the dark trees of Flamengo Park, lighting the participants in rich patterns of color and sound.

Families in the audience trustingly gave us their children to take up on the stage, where they sang songs quickly learned. As they sang back to their people, I thought of the sharing of DNA by the ancient bacteria - each giving a little of theirs to form the new nucleus. It was a crucible of joyous sharing, a celebration heralding the formation of a network spawned and realized during the preceding two weeks and continuing around the world even now.

By sharing our grassroots experience, by establishing every possible means of communications around the planet, and by making plans to link and expand Earth restoration projects and alternative economies, we took matters into our own hands.

Like our bacterial ancestors, we were learning to use the technologies invented during our nearly disastrous competitive phase to implement the shift to cooperation. If we understand the evolutionary pressure on us now to complete the organization of this new "body of humanity," we can work at the task consciously and rapidly.

Printed with permission of Context Institute. In Context. Fall 1993, Page 40

URL: <http://www.context.org/ICLIB/IC36/Sahitour.htm>

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From the Four Directions is a global initiative of the **Berkana Institute**. Our purpose is to support life-affirming leadership through the creation of on-going conversation circles. This initiative was conceived in the Spring of 2000. It has since grown to involve and attract more than 1,000 people from more than 30 countries.

We define a leader as anyone who wants to help at this time. The planet has an abundance of these leader-servants. Every country has them. The solutions we need are already here. We work to strengthen the practice and visibility of these leaders, locally and globally.

From the Four Directions is grounded in several beliefs and intentions.

- At this fragile yet potent time for our planet, we claim responsibility for influencing the values and practices used to organize human endeavor.
- We act globally and locally to support those leader-servants who know how to develop healthy, creative, life-affirming organizations and communities.
- We offer them the resource of local, on-going circles where diverse colleagues meet to reflect, refine their practice, affirm each other's talents, and strengthen their courage to lead.
- From local circles meeting everywhere, we weave together a global web of leaders who offer their vision, courage, and practice to influence the direction of the future.
- We will astonish the world with what is possible when we create organizations that affirm and rely on the human spirit.

How we organize our communities and organizations—the values and practices we use—will determine whether we create a world that affirms and nourishes humans and all life. Those of us engaged in "From the Four Directions" have faith that as a planetary culture, we are capable of making this courageous choice. Our work contributes to this by organizing at the grass-roots level to support life-affirming leaders of all ages and in all places.

Berkana serves the vision of a world where people experience themselves as whole, healthy, sacred and free.

<http://www.berkana.org/berkana.html>

try to danger. It works the same in any country."

—spoken by Hermann Goering, Adolf Hitler's Deputy Chief and Luftwaffe Commander, at the Nuremberg trials, 1946 from "Nuremberg Diary" by G M Gilbert (Signet, New York, 1947)

In our September 2001 issue following the attack on the twin towers we featured an article titled, "**The Algebra of Infinite Justice**" by **Arundhati Roy**, writer and passionate global justice advocate from India. She wrote; "**Here's the rub: America is at war against people it doesn't know, because they don't appear much on TV....What we're witnessing here is the spectacle of the world's most powerful country reaching reflexively, angrily, for an old instinct to fight a new kind of war. Suddenly, when it comes to defending itself, America's streamlined warships, cruise missiles and F-16 jets look like obsolete, lumbering things. As deterrence, its arsenal of nuclear bombs is no longer worth its weight in scrap. Box-cutters, penknives, and cold anger are the weapons with which the wars of the new century will be waged. Anger is the lock pick. It slips through customs unnoticed. Doesn't show up in baggage checks.**"

Recently, at the **World Social Forum in Porte Alegre, Brazil**, Roy commented on our present crisis; "**Our strategy should be not only to confront empire, but to lay siege to it. To deprive it of oxygen. To shame it. To mock it. With our art, our music, our literature, our stubbornness, our joy, our brilliance, our sheer restlessness - and our own stories...**"

"Remember this: We be many and they be few. They need us more than we need them. Another world is not only possible, she is on her way. On a quiet day I can hear her breathing."

It reminds me of a statement I heard once.

**Remember,
The ark was built by amateurs;
The Titanic by professionals.**

On February 4, 2003 DavidKupfer <harpo@well.com> posted this item:

Creating the Future

We are a future-creating species, the great futurist **Fred Polak** wrote in 1955. *"Our future is not merely something that happens to us but something that we can participate in creating. If we do this consciously, we can create a world that works. With a positive image of the future, we'll invest in our children's education and upbringing, build schools, bridges, roads, ports, and sewers, water gas, electric, and communication lines, and establish new businesses and institutions. Even if we turn out to be quite mistaken on the details of what we imagine, the result will still be quite positive."*

Polak demonstrated the power of a culture's images of the future in a two volume magisterial survey, of fifteen hundred years of Western beliefs about the future. He showed that society's image of the future is a self-fulfilling prophecy and helped initiate the discipline of future studies. His enormous, painstaking study was no mere academic exercise. Polak was a Dutch Jew who spent the entire war in hiding from the Nazis. His work is the result of wrestling with the most necessary, urgent question of our time: how can humanity create a better future?

If a culture lacks a positive view of the future, Polak showed, its creative power begins to wither and the culture itself stagnates and eventually dies out. Negative images are even more destructive, leading to hopelessness, helplessness, and failure to provide for the future. The collective pessimism results in "endgame" behaviors, with people snatching and grabbing to secure something for themselves before everything falls apart. This behavior brings about the very collapse they fear.

Today as we are besieged by planetary problems, the risk is that we will deal with them in just the pessimistic and unproductive style Polak decried. Transfixed by an image of our own

The Genesis Of Complexity

Dedicated To Heinz Pagels

by Ralph H. Abraham

(Ed. Note: We have extracted the highlights of this article to get a sense of the shift of perspective brought about by the "New Sciences" which are influencing our emerging world view. Dr. Abraham states that he is attempting "A portrait of Complexity Theory seen through the lens of Complexity Theory itself." The complete text can be found at www.Ralph-Abraham.Org The author portrays the subject as an evolving complex dynamical system, or social network, with bifurcations, emergent properties, and so on. This is a capsule history covering the 20th century.

Extensive background data may be found at www.Visual-Chaos.Org/Complexity)

Introduction: The Three Roots

Our analysis of the history of complexity theory during the 20th century will describe its three roots, and their interactions and bifurcations as a complex dynamical system. These roots are **Cybernetics**, **General Systems Theory (theoretical biology)**, and **Systems Dynamics**. We begin by telling their separate stories, then describe their links, their fusion into the trunk of complexity, and end with capsule descriptions of the main branches of complexity theory today, and a personal memoir. Throughout, DST denotes dynamical systems theory, a major branch of mathematics dating from Isaac Newton, which has pure, applied, and (more recently) computational aspects.

Cybernetics, 1946

Cybernetics is an interdisciplinary field born during WW 2 on the east coast of USA. Its story is well told by Steve Heim's history, *The Cybernetic Group*, (1991) The cybernetic group is Heim's name for a group of eight "cyberneticians" from three fields:

- Mathematics: Norbert Weiner, John Von Neumann, Walter Pitts
- Engineering: Julian Bigelow, Claude Shannon
- Neurobiology: Rafael Lorente de No, Arturo Rosenblueth, Warren McCulloch

In 1942, they met in New York on the instigation of the Josiah Macy Foundation: McCulloch and Pitts from the University of Illinois, Chicago; Von Neumann from the Institute of Advanced Studies, Princeton; Weiner, Bigelow, Rosenblueth, and Shannon from MIT, Cambridge, and Lorente de No from the Rockefeller Institute, New York. In 1943, McCulloch and Pitts published their very seminal paper on neural networks. In 1946, the group increased to 21 members.

The Macy Conferences

Cybernetics, itself emerged from a series of ten meetings organized again by the Macy Foundation from 1946 to 1953, in which cyberneticians were joined with a group of social scientists led by anthropologists Gregory Bateson and Margaret Mead and including gestalt psychologist Kurt Lewin. These Macy Conferences comprised vociferous discussions, each triggered by a brief statement by one of the group. The first wave of cybernetics may be taken to mean the sum of all these discussions. Later, of course, its meaning was refined by various people but the transcripts of the first nine meetings have been published and summarized by Heims in his book, so you may derive your own definition of cybernetics if you like. (Von Foerster, 1952) Certainly circular and reticular causality, feedback networks, artificial intelligence, and communication are among its main themes.

General Systems Theory 1950

General Systems Theory, the brainchild of Ludwig von Bertalanffy in Vienna evolving since the 1920s, may be regarded as a European counterpart to the American cybernetics movement.

Von Bertalanffy

Homeschooled in biology, von Bertalanffy attended meetings of the Vienna Circle—a group of scientists and philosophers devoted to logical positivism organized by Morris Schlick, Professor of Philosophy at the University of Vienna. Although opposed to the positivist philosophy of science, von Bertalanffy earned a Ph.D. with Schlick and became a professor of biology at the University of Vienna. His first books were devoted to theoretical biology (1928, 1932) Around the time of his immigration to North America in 1950, his ideas coalesced into GST, in which all systems were considered similar, whether physical, biological, or social. The main ideas of GST were holism, organicism, and open systems, as found in the biological sphere but von Bertalanffy generalized grandly to social systems and world cultural history. On arriving in North America, he moved about widely, visiting Stanford in 1954. At Stanford, with Ralph Gerard, Kenneth Boulding, and Anatol Rapoport, Von Bertalanffy created the society for General Systems Research (SGSR) in 1956.

Waddington

The Theoretical Biology Club at Cambridge University in England was organized by Conrad Hal Waddington in the 1930s. Joseph Henry Woodger, a member of the club, translated von Bertalanffy's first book from German to English, establishing a connection between Vienna and Cambridge. A series of meetings on theoretical biology, somewhat like the Macy Conferences on cybernetics were organized by Waddington under the auspices of the International Union of Biological Societies (IUBS). Taking place in the Villa Serbelloni on Lake Como in the North of Italy (1966-70), they were attended by engineers, biologists, mathematicians, and others primarily from Europe. These meetings, and their published proceedings edited by Waddington, projected GST into a very wide interdisciplinary world of its own in the 1970s. (Waddington, 1968-1972)

System Dynamics, 1956

Dynamical Systems Theory is a large branch of mathematics created by Isaac Newton, and given its modern form by Poincare around 1880.

Aspects of DST

Its pure aspect came to be known as Chaos Theory after 1975 or so, following the dramatic impact of the computer revolution, and the consequent discovery of chaotic attractors. (Abraham, 2000) Catastrophe theory and fractal geometry are related subjects. The applied aspect of DST traditionally embraced much of mathematical physics, biology, medicine, and the social sciences. Since the advent of analog and digital computers in the 20th century, the applications have expanded greatly in scope and importance. One of the threads of computational and applied DST is crucial to the evolution of the theories of complexity: Systems Dynamics (SD). This thread, primarily the work of Jay Forrester and his group at MIT, is our goal in this section. (Forrester, 1961)

Early analog machines

Important developments by Vannevar Bush at MIT, beginning in 1925, resulted in large machines such as the Differential Analyzer, capable of integrating large-scale dynamical systems. Eventually these were used as weapons during WW2. Bush—who was working jointly with Weiner by 1929—was an extraordinary genius, and foresaw hypertext and the internet. (Burke, 1994)

future decline, we could actually bring it about. A positive view of the future, according to writer and philosopher **David Spangler**, “challenges the culture to dare, to be open to change, and to accept a spirit of creativity that could alter its very structure.”

Announcement

Endicott College and The Institute for Educational Studies (TIES) announces the new Masters of Education concentration in **Montessori Integrative Learning** beginning July 2003

We believe that a thorough investigation of the following questions is essential.

- What are the roots of the Montessori vision? How do current scientific findings support and expand that vision?
- How might cosmic education lead to systemic thinking, integrated learning and the creation of a new society as described by Maria Montessori?
- How can communities of learners support radical intuition?
- In what ways can Montessori be applied in a wide range of school situations?

The three-semester course of study includes elementary (six -12 years) teacher preparation. The on-line seminars and course work are divided into three sections:

I. Context.

The context of the Montessori vision: science, cultural anthropology, ecopsychology, transpersonal research, cultural history, social science and social transformation.

II. Montessori Theory.

The exploration of the role of observation, the formation of the teacher, sensitive periods, human needs and tendencies, the four planes of development and the “prepared environment.”

III. Presentations and Practicum.

This phase of the work includes the delivery of Montessori lessons for six to 12 year olds. Cosmic stories form the foundation for all of this work. Students also complete a 150-hour practice teaching practicum.

For further information:

http://www.ties-edu.org or write Cate Turner-Jamison <ties@endicott.edu>

Book Review

The Design Way: *Intentional Change in an Unpredictable World: Foundations and Fundamentals of Design Competence*

by Harold G. Nelson & Erik Stolterman
Educational Technology Publications, Inc.
May 2003

This book explores the idea of design as the ongoing genesis of the real world—the seminal process of world creation. The authors make the case for design as both the oldest form of human intention—the one that defines us as being human—and design as one of the emerging approaches to creative human inquiry and innovative action, superbly suited to facilitating intentional change in an unpredictable, complex and dynamic world.

Design is presented as an intrinsic process that people are continually engaged in and have used throughout time. Explained as a form of strategic intent, design is presented as disparate from problem solving. Rather, it is presented as a tradition of reflective inquiry and practical action; distinct from science and art, built on its own foundations, with its own fundamentals and located within its own metaphysical domains. Design is treated as a means of creating both the material and immaterial world.

The book is a composition of ideas that creates an image of design, designers and designing as an integration of imagination, systemic reasoning and pragmatic action with applications in business, government, and the professions. The book provides a starting point for the acquisition of personal and organizational design competence. The authors introduce the challenges of design learning and education with an eye to the development of design character. Design character means responsibility for the future.

Library of Congress Cataloging-in-Publication Data: Nelson, Harold G., Stolterman, Erik. The design way! Includes bibliographical references and index. ISBN 0-87778-305-5

Early digital machines

The first digital computer is attributed to John Atanasoff, at Iowa State College in 1942. The further development of digital computers and computational math was the work of mathematicians and electrical engineers during WW2, especially, we may note, Norbert Weiner at MIT, John von Neumann and Julian Bigelow at Princeton, and Alan Turing in England.

System dynamics

Just as Vannevar Bush was finishing his mechanical analog computer, in 1940, Jay Forrester founded the **Servomechanism Laboratory** of MIT and began working on digital computers. He founded the MIT Digital Computer laboratory in 1951 and is credited with crucial inventions, including the magnetic core memory device. In 1956, toward the end of the career of Vannevar Bush, Forrester carried on the MIT tradition of computational applied dynamics, but using digital computers and modern software for simulation and graphical display of complex dynamical systems. His first book on this work, *Industrial Dynamics* of 1961, broke new ground. Eventually this technique became known as system dynamics, and his System Dynamics Group grew from 1968 into the present day **Sloane School of Management** of MIT.

Links Between Roots, 1956-1970

[Abraham points out the many links that were developed between the three roots of complexity theory. He notes the links between Cybernetics and General Systems theory (1956) via the Macy Conferences on Cybernetics in New York and the Serbelloni meetings on General Systems Theory in Europe. He notes the links between Cybernetics and System Dynamics through the proximity of Weiner and Forrester, both working at MIT. He notes the further link between Forrester and the influence of cybernetician/social psychologist Kurt Lewin.]

The links between GST and System Dynamics is found in the **Club of Rome** which was convened by Aurelio Peccei in Rome in April 1968. He writes; This group was aware of GST. In June, 1970, now numbering 75 members, the Club met in Bern and focused on the problem of the predicament of mankind. Jay Forrester of the System Dynamics Group at MIT attended this meeting and persuaded the members to come to MIT to see the capability of his modeling and simulation technology for forecasting the limits of the biosphere. This resulted in the World Dynamics model of the SD Group and the **Limits to Growth** project, which predicted that the Earth would be overloaded within a century. This project established systems dynamic (complex dynamical systems theory) as the mathematical form of GST. (Meadows, 1972)

Complexity, The Trunk, 1977

Cybernetics had its fluorescence, then General Systems Theory, and Systems Dynamics, as we have seen. The links among the support communities of these interdisciplinary zones rapidly grew in number and strength. Eventually the whole complex system of ideas became a larger system for which we may use the theories of complexity as a nickname.

The Branches of Complexity, 1990

By 1990 or so, more than a score of distinct areas could be identified as branches of complexity theory, along with CYB, GST, and SD. Active branches of computational mathematics derived from the three roots of complexity, with approximate creation dates, include:

- Artificial neural networks, (SD), 1943
- Cellular automata, (CAs) 1950

Catastrophe theory, bifurcation theory, 1967

Chaos theory, 1974, Fractal geometry, 1975

Active branches of the sciences derived from the roots of complexity include:

Schismogenesis and netwar, 1920

Mathematical and theoretical biology, 1925

Biospherics, 1944

Ecology, 1964, Homeokinetics, 1967

Synergetics, 1975

Autopoiesis, General evolution theory, 1985

Gaia theory, 1988

Personal History, 1960-2000

From 1960 through 1968, DST was one of my primary areas of research in pure mathematics. Upon contacting new experimental results from analog and digital computer research, this line of work came to a crisis, as I have recounted elsewhere. (Abraham, 2000; ch.6) By 1971 many of us had turned to the sciences for fresh inspiration, and a new research program for DST. I was intrigued by the field theories of **Kurt Lewin** and **Wilhelm Reich**. In 1972, **Rene Thom** (recently returned from the Serbelloni meetings) introduced me to the work of **Hans Jenny**, who had studied for years the patterns created in fluid media exposed to acoustic vibrations. By 1974 I had constructed a laboratory inspired by Jenny to continue his work. My interest was to discover the "edge of chaos" in vibrating fluid experiments.

At this time, my friend **Terrence McKenna** introduced me to **Erich Jantsch**. Erich was, at that time, a professor of management science at U.C. Berkeley, impressed by **Prigogine's** work on self-organization, and was editing a volume with **Conrad Waddington** (the theoretical biologist) called *Evolution and Consciousness*. I recognized Erich, although quiet and modest, as an original polymath and genius. He had just completed a book, *Design for Evolution*, which was a seminal work on general evolutionary theory (GET). He invited me to contribute a chapter to his book with Waddington, and in the summer of 1974 I sent him a report on my vibration project. Waddington died during the preparation of this book. When it appeared in 1976, I found myself in the company of Waddington, Prigogine, Jantsch, and other luminaries of GST, GET, and so on. I read their works for the first time.

Soon, Erich invited me to contribute to another collection, *The Evolutionary Vision*. This time I sent him an essay more in the line of his main interest, the evolution of consciousness. And when this book appeared in 1980, I found myself again in interesting company: **Prigogine, Jantsch, Kenneth Boulding, Hermann Haken, Peter Allen, Howard Pattee, Elsie Boulding**, and several others, visionaries of self-organization, GST, GET, etc. Eventually I met most of them. Unfortunately, Erich died prematurely before this book appeared.

My brother Fred, in the early 1970s, had created a frontier laboratory of neurophysiology at the **Brain Research Institute, UCLA**. Partly through his influence, I developed an interest in brain waves, and all this led to my meeting **Gene Yates** and **Arthur Iberall** (who had been at Serbelloni in 1967) in a panel organized by **Walter Freeman**, the brain chaos pioneer, at the Winter Conference on Brain Research (WCBR) a brain child of my brother Fred, in January, 1979. This in turn led to my invitation to Yates' conference on self-organizing systems in Dubrovnik, August, 1979. Seen as a successor to cybernetics and GST, this meeting brought together veterans of the Serbelloni conferences of the preceding decade--**Michael Arbib, Brian Goodwin, Arthur Iberall, Howard Pattee**--with like-minded experts of many sciences. (Yates, *Self-Organizing Systems*, 1987)

In May, 1985, a call from **David Loye** and **Riane Eisler** led to a meeting with **Ervin Laszlo**, who had studied with Von Bertalanffy and became a leading systems philosopher. This meeting was part of a program to create the **General Evolution Research Group (GERG)**, which even today carries on the unification program of Cybernetics, GST, GET, Theoretical Biology, Self-Organization, complexity and so on.

(continued on next page)

The Business School of the University of Hull, Masters Programmes Office, Hull, UK announces a specialist **MSc Management Systems** program founded on the conviction that complex management problems are best tackled by means of a coherent systems approach. *"In a world that is increasingly complex and turbulent, we are discovering the power of systems thinking to help us understand and manage the huge problems faced by organizations and society."*

The 12 month full-time study on the Hull campus aims to;

- introduce the most up-to-date systems theories and methodologies
- foster an appreciation of the complementary nature of different systems approaches to problem solving
- enable students to make informed choices /decisions by means of systems approaches
- develop an awareness of the social impact or those choices/decisions.

The Masters degree provides the theoretical underpinnings for practical involvement in the management of systems in society. The program content is directed towards;

- creativity and different ways of viewing systems,
- overcoming obstacles to participation,
- facilitating problem-solving and effective change management,
- developing self-organizing systems within organizations,
- managing the influence of power and politics, and opening spaces for critical reflection about ethical practices.

The **Critical Systems Thinking** approach embodies both Hard systems and Soft systems as well as Emancipatory systems thinking which adds a further dimension.

The city of Hull is one of the least expensive places to live in the UK. *Information on the program, the city and accommodations at the University can be found at;*

www.hull.ac.uk/hubs

Book Review

Becoming Good American Schools: *The Struggle for Civic Virtue in Education Reform*

By Jeannie Oakes, et al.
Jossey-Bass Inc. San Francisco. 1999

In the search for public virtue, defined in the words of John Adams as "a positive passion for the public good," the authors contrast a democratic view with the increasingly popular conception of public life as a marketplace. A market vision of civic life is grounded in the nation's competitive, hierarchical economic structure, rather than its more egalitarian political ideals.

Drawing on a ten year comparative nation-wide case-study of 16 middle schools struggling to reform, they note that "*Americans' unyielding attachment to education reform as a technical and rational process, realized in what we call with due disrespect, the reform mill, complicates the work of a passionate minority seeking the common good.*"

The study demonstrates the blocks to transformation in the public school setting showing how new practices allow for "save simulations." Instead of probing deep within the culture of schools and classrooms to construct activities and relationships that are more educative and which might seriously disrupt the cultural norms, the school institutes a safe substitute that poses no such threat. (p. 86) Students are allowed to "practice" cooperative learning in a blatantly adult-controlled environment. Such technical reform measures as standardized testing create the cultural contradictions seen in the struggle to reform the participatory processes.

In this longitudinal study the authors show in lively and detailed stories that, as the Chilean biologist/cybernetician Humberto Maturana has also shown (see *PATTERNS* September 1999), the dynamics of changing schools lies in changes within educators themselves—those educators able to reconcile the cultural conflicts inherent in our Jeffersonian interest in individual liberty and personal gain, coupled with

My great luck in meeting these extraordinary thinkers has had a powerful effect on my mathematical work, and I continue my experimental program on complex and cellular dynamical systems and digital computers and computer graphics in the shadow of their influence.

Conclusion, The Future

We may surmise that the complex system of complexity theories is at an early stage in its own evolution. Despite long efforts by brilliant people, little actual theory has been established so far. One would hope that evolution would race on, bringing our species to a new level of intelligence. Unfortunately, the future is not so clear. So far, universities have not supported complexity, and research and publication activities are thinning out. (for the latest, consult the online **Complexity Digest** at www.comdig.org) Nevertheless, GST has grown into an enormous community, represented by the **International Society of Systems Sciences (ISSS)**, **CYB** continues its very nonlinear evolution, in a second wave (since 1965) and a third (since 1985) as for example in the **American Society for Cybernetics (ASC)** and similar groups in other nations, and **SD** lives on at MIT, in the journal, *System Dynamics Review*, and in the children of its original **SD** software, **DYNAMO**, such as **STELLA**, **Berkeley Madonna**, and others. Also, GST has emitted a new major branch, **General Evolution Theory**, with its **General Evolution Research Group (GERG)**, and its journal, *World Futures*. The future is not ours to see, and the theories of complexity may yet thrive, or starve. Time will tell.

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Further references and an extended glossary can be found at www.ralph-abraham.org

Simple patterns underlie the mystifying complexity of knowledge evolution.

Derek Cabrera

International Society for the Systems Sciences

At the 47th annual conference of the International Society for the Systems Sciences (ISSS), July 6 - 11, in Crete, four concurrent co-laboratories will be offered.

- **Wisdom of the People Forum** - facilitated by Americans for Indian Opportunity (AIO; Laura Harris) and the Advancement of Maori Opportunity (AMO). Proposed Triggering Questions: What are the challenges to reaching out to and relating with other Indigenous peoples who may be in different places and different spaces? What actions, if taken by the AMO and AIO, would address these challenges?
- **Co-Laboratory of Democracy in Spanish** - brokered by Enrique Herrscher (Argentina), facilitated by Reynaldo Trevino (Mexico) and Cesar D'Agord (Brazil). The focus of attention will be on understanding the spontaneous outbreaks of street corner democracy, such as those in Buenos Aires, and devising ways to harness their energy to renew democratic governance in Latin America.
- **Co-Laboratory of Democracy in Greek** - brokered by Ioanna Tsivacou (Greece) and facilitated by Marios Michaelides and Noni Diakou (Cyprus). This co-lab will focus on the challenges faced by traditional cultures (specifically Greek) as they strive to retain their cultural values within the encroaching global economy.
- **Co-Laboratory on Constructing Agoras of the Global Village** - brokered by Ken Bausch (USA), facilitated by Aleco Christakis (Greece/USA) and Surinder Batra (India). Recognizing that the trends towards some kind of globalization are irreversible, this co-laboratory will apply boundary-spanning structured dialogue to the project of constructing agoras of the global village. It will exemplify an efficient way that diverse groups of people can address the inter-related and complex problems connected with globalization. Triggering Question: "What global and local challenges do we anticipate in constructing Agoras of the Global Village with the engagement of stakeholders?"

Further information on these co-laboratories and on other Crete activities, including the conference program and paper abstracts, can be found at
www.issc-conference.org.

Excerpt from Wisdom of the People

The following excerpt is taken from ISSS President Aleco Chirstakis' introduction to *Wisdom of the People*, a book now in preparation.

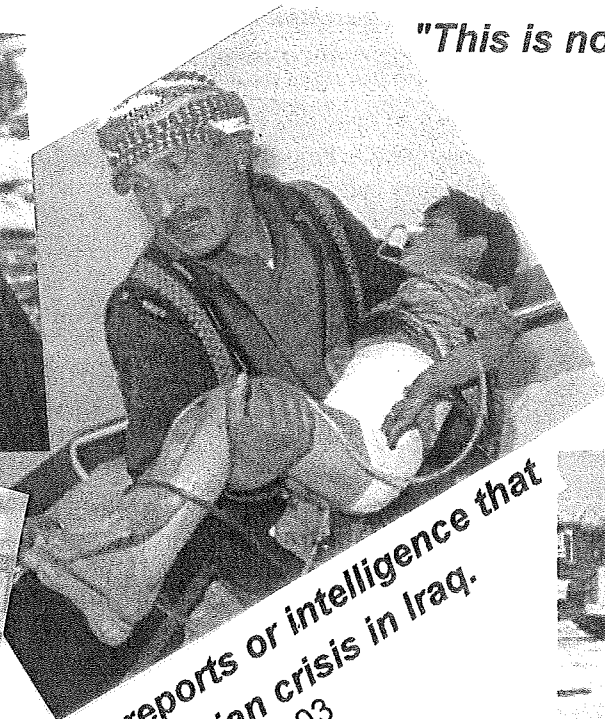
People all over the world aspire to participative democracy, and yet the democratic planning and design of any social system from cities to national health care programs, is threatened by the inability to engage stakeholders in a meaningful and productive dialogue.

We make the case that the use of dialogue for gaining understanding and building a consensus on complex issues among interested and affected stakeholders necessitates the use of a new scientific paradigm. We will tell the story of the commitment a group of researchers made over thirty years ago to the development and testing of a new scientific paradigm for enabling people to engage in meaningful dialogue today. The hope is that the story will influence the stream of events at this critical juncture of the evolutionary process of humanity. The fundamental thesis is that there cannot be conscious evolution of humanity without the capacity to explicate through dialogue the wisdom of the people in the Agoras of the 21st Century Global Village.

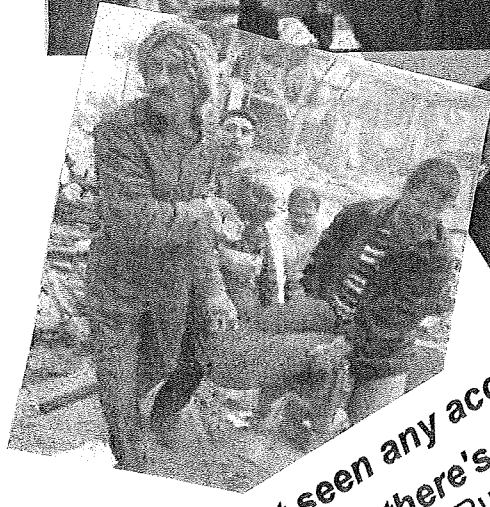
"Shock and Awe"

The Ultimate C

"We have money to ruin the health of the Iraqi children, but

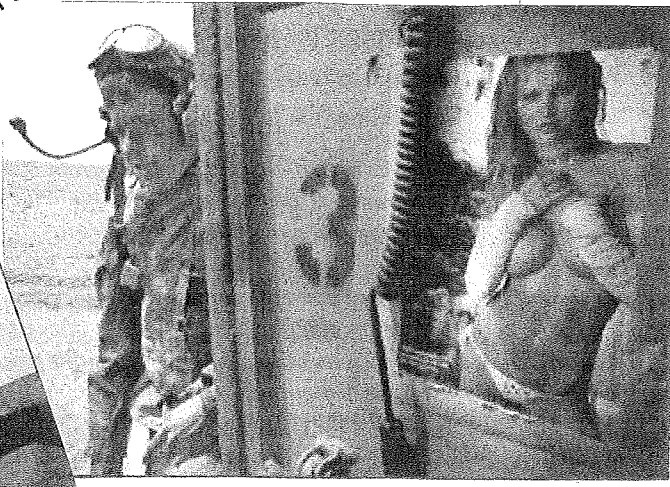
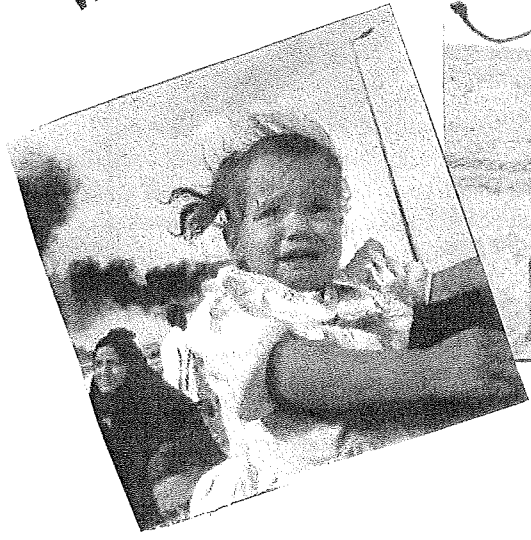


**"This is not a war against a people. It is
It is most certainly not a war
-D. Rumsfeld, Pentagon Briefing**



**We have not seen any accurate reports or intelligence that
suggests there's a humanitarian crisis in Iraq.
- D. Rumsfeld, March 28, 2003**

**Soon the Iraqi people will see the
but other nations are
about the human
-G.W. Bush at F**



**"The world has also seen the nature of the young men and
behalf. They are showing kindness and respect to
- Bush in a radio address to the nation, March**

Photo Sources: Al Jazeera, La Voz de Aztlan, MSNB

Complexity of WAR

to repair the health of our own children and our educational programs."
- U.S. Rep. Dennis Kucinich, April 1, 2003

not a war against a country.
against religion,"
g, March 20, 2003



"Our targeting process remains deliberate,
it remains sophisticated, and it remains precise."
-U.S. Brigadier General Vincent Brooks, CENTCOM Briefing, March 28, 2003

great compassion of not only the United States,
around the world who care deeply
condition inside that country,"
entagon Briefing, March 25, 2003



and women who fight on our
to the Iraqi people."
29, 2003

World Dialogue: A Sign of Hope

by Lynne Twist

This is a summary of a speech made by Dr. Robert Muller in San Francisco on February 5, 2003

Dr. Robert Muller, former assistant Secretary General of the United Nations, now Chancellor emeritus of the University of Peace in Costa Rica was one of the people who witnessed the founding of the U.N. and has worked in support of or inside the U.N. ever since. Recently, he was in San Francisco to be honored for his service to the world through the U.N. and through his writings and teachings for peace. At age eighty, Dr. Muller surprised, even stunned, many in the audience that day with his most positive assessment of where the world stands now regarding war and peace.

I was there at the gathering and I myself was stunned by his remarks. What he said turned my head around and offered me a new way to see what is going on in the world. My synopsis of his remarks is below:

"I'm so honored to be here," he said. "I'm so honored to be alive at such a miraculous time in history. I'm so moved by what's going on in our world today."

I was shocked. I thought — Where has he been? What has he been reading? Has he seen the newspapers? Is he senile? Has he lost it? What is he talking about?

Dr. Muller proceeded to say, "Never before in the history of the world has there been a global, visible, public, viable, open dialogue and conversation about the very legitimacy of war".

*I'm so honored to be alive
at such a miraculous
time in history.*

The whole world is now having this critical and historic dialogue—listening to all kinds of points of view and positions about going to war or not going to war. In a huge global public conversation the world is asking; "Is war legitimate? Is it illegitimate? Is there enough evidence to warrant an attack? Is there not enough evidence to warrant an attack? What will be the consequences? The costs? What will happen after a war? How will this set off other conflicts? What might be peaceful alternatives? What kind of negotiations are we not thinking of? What are the real intentions for declaring war?"

All of this, he noted, is taking place in the context of the United Nations Security Council, the body that was established in 1949 for exactly this purpose. He pointed out that it has taken us more than fifty years to realize that function, the real function of the U.N. And at this moment in history— the United Nations

is at the center of the stage. It is the place where these conversations are happening, and it has become in these last months and weeks, the most powerful governing body on earth, the most powerful container for the world's effort to wage peace rather than war. Dr. Muller was almost in tears in recognition of the fulfillment of this dream.

"We are not at war," he kept saying. We, the world community, are WAGING peace. It is difficult, hard work. It is constant and we must not let up. It is working and it is an historic milestone of immense proportions. It has never happened before-never in human history-and it is happening now-every day every hour-waging peace through a global conversation. He pointed out that the conversation questioning the validity of going to war has gone on for hours, days, weeks, months and now more than a year, and it may go on and on. "We're in peacetime," he kept saying. "Yes, troops are being moved. Yes, warheads are being lined up. Yes, the aggressor is angry and upset and spending a billion dollars a day preparing to attack. But not one shot has been fired. Not one life has been lost. There is no war. It's all a conversation."

It is tense, it is tough, it is challenging, AND we are in the most significant and potent global conversation and public dialogue in the history of the world. This has not happened before

on this scale ever before-not before WWI or WWII, not before Vietnam or Korea, this is new and it is a stunning new era of Global listening, speaking, and responsibility.

In the process, he pointed out, new alliances are being formed. Russia and China on the same side of an issue is an unprecedented outcome. France and Germany working together to wake up the world to a new way of seeing the situation. The largest peace demonstrations in the history of the world are taking place—and we are not at war! Most peace demonstrations in recent history took place when a war was already waging, sometimes for years, as in the case of Vietnam.

"So this," he said, "is a miracle. This is what "waging peace" looks like."

No matter what happens, history will record that this is a new

(continued on next page)

era, and that the 21st century has been initiated with the world in a global dialogue looking deeply, profoundly and responsibly as a global community at the legitimacy of the actions of a nation that is desperate to go to war.

Through these global peace-waging efforts, the leaders of that

Dr. Muller also made reference to a recent New York Times article that pointed out that up until now there has been just one superpower-the United States, and that that has created a kind of blindness in the vision of the U.S. But now, Dr. Muller asserts, there are two superpowers: the United States and the merging,

***This is new and it is a stunning new era
of Global listening,
speaking, and responsibility.***

nation are being engaged in further dialogue, forcing them to rethink, and allowing all nations to participate in the serious and horrific decision to go to war or not.

surging voice of the people of the world.. All around the world, people are waging peace. To Robert Muller, one of the great advocates of the United Nations, it is nothing short of a miracle and it is working.

This is what "waging peace" looks like.

Dear Friends,

Given the urgency of the situation in Iraq, I have written an action guide called "101 Ways to Stop the War on Iraq" It contains all the email and letter-writing addresses, peace movement contacts, and everything that anyone could need to stop the US attempt to force the world into a war that no-one wants. It's on-line now, ready to jump in and use, at

<http://www.earthfuture.com>

Please send this out to all your friends, far and wide. The whole world has to stand up, now. We are millions. See <http://www.usgreens.org>.

It's now about just one thing: shall we determine the fate of our world by dominance, or by cooperation? This is the evolutionary choice that our planet faces . Do we continue to live by dominance and oppression, or do we chart a path of cooperation that can lead us towards a peaceful, just, sustainable, ecologically prosperous future?

If every one of us stands up, in one way or another, we can tip the balance. Just choose five, and do them, with all your heart.

***With faith in our future on a beautiful planet, in a beautiful universe,
Guy Dauncey
Victoria, B.C., Canada
<http://www.earthfuture.com>***

Book Review (continued from p. 8)

communal caring and social justice. Their struggle is our own struggle to create virtuous compromise as citizens of a changing world. It addresses the main paradox of our time—the paradox of the one and the many.

"What we found," Oakes concludes, "exposes the fragility of public support for values of citizenship in an era where bureaucratic reforms have reduced our concept of a 'good school' to little more than higher scores on standardized tests."

This is a valuable book for educators and

all citizens seeking transformation. In telling the stories of these 16 schools representing the diversity of our society, the authors enrich the dialogue about what kind of nation we desire, thus guiding the action determining the role of schooling in designing that society.

Dr. Oakes is Associate Dean of the Graduate School of Education and Information Studies at the University of California in Los Angeles. Co-authors are Karen Hunter Quartz, UCLA; Steve Ryan, University of Louisville; and Martin Lipton, UCLA

***We are all woven together
In a single garment
of destiny.***

Martin Luther King

WHEN COMPASSION BECOMES DISSENT

On the post-9/11 struggle to teach creative writing while awaiting the further annihilation of Iraq

by David James Duncan

*Excerpts from an article printed in ORION, January February 2003, and also available at www.oriononline.org
A free trial copy of this issue of ORION magazine is available by contacting this website.*

I HAVE BEEN SERVING MY COUNTRY, this deceptively serene Rocky Mountain autumn, as a visiting instructor of creative writing at the University of Montana. I lead two classes, each three hours long, with twenty students all told. My students are not "aspiring writers" exactly: they're the real thing, and in two months time their collective intensity, wit, and talent have lifted our joint undertaking into the realm of arduous but steady pleasure. Yet as the semester unfolds and we listen to President Bush and his various goaders and backers wage a rhetorical war on Iraq and prepare an increasingly vague national "we" to lay waste to Saddam Hussein, the mere teaching of creative writing has come to feel, for the first time in my life, like a positively dissident line of work.

Creative writing requires a dual love of language and of life, human and otherwise. The storyteller then sculpts these raw loves with acute observation, reflection, creative struggle, allegiance to truth, merciless awareness of the foibles of human beings, and unstinting empathy toward human beings even so. Not only have these strategies foundered in the post-9/11 rhetoric of the Bush administration, they look to me to have been outlawed by two recent federal documents: the "2002 National Security Strategy for the United States" and the 107th Congress's "Patriot Act."

Had I been invited to proofread these puffed-up rhetorical works with the same critical eye I am paid to apply to student rough drafts, I'd have been forced to tell their authors that they had composed two half-truth-telling, hypocrisy-laden pieces of sociopathic cant and that they should throw them away and start over. Both works redefine Earth as a heavenly body

whose countries and cultures the Bush administration and Congress were appointed to judge and police. Both are based on the belief that opposing Bush rhetoric is traitorous, that spying on neighbors and friends is patriotic, that fighting for our personal freedom "obstructs enhanced surveillance procedures," that manufacturing and exporting weapons of destruction are our greatest protection against weapons of destruction, that terrorizing the citizens of other nations is the greatest safeguard against terrorist acts against our own nation, that biological health, a sustainable natural economy, and the conservation of ecosystems are beneath consideration in this time of red-white-and-blue crisis, and that a daily life of compassion and self-examination is the naïve position of sentimentalists and weaklings.

Creative writing requires a dual love of language and of life.

In such an America the teaching of creative writing is one of countless professions that has been inadvertently redefined as dissident. This puts me in an odd position. Having signed a contract to teach before Bush/Cheney/Powell's "New America" existed, and knowing only the former America's literary methods, I'm left no choice but to instruct my students in how to become what the new national lexicon might call "better unAmericans."

ANOTHER EXAMPLE of how the New America forces literature into a dissident position is Bush's presumption (stated in the National Security Strategy, page 5) that it is the New America's "clear responsibility to history" to "rid the world of evil."

As a lifelong student of the world's wisdom literature, it is my duty to inform students that "ridding the world of evil" is a goal very different from any recommended by Jesus, Buddha, or Muhammad, though not so different from some recommended by the Josephs Stalin and McCarthy and by Mao Tse Tung. In wisdom literature the principal evil to be attacked by the person of faith is the evil in oneself, and a secondary evil to be opposed is the power of anyone who victimizes the weak. The National Security Strategy, on the other hand, is a call for unquestioning obedience to and financial support of the Bush administration's desire to commit our bodies, minds, ravaged ecosystems, work force, and soldiers to an unspecified series of international bullying actions. Regardless of what we think of this as "patriots," those of us who maintain a politically unfashionable love for the world's scriptures can't help but notice that this document is a hell of a step down in the canon of literature by which people of faith direct their lives.

Another bone I must pick with Bush's aim to "rid the world of evil" is with its authorship. As a novelist, I daily concoct speeches destined to emerge from the mouths of fictitious characters. This practice compels me to point out that, every time he speaks formally (which is to say, reads), the president is less himself than a fictitious construct pretending to think thoughts placed in his mouth by others. Thus we see, for example, Bush confusing the words "region" and "regime" as he stands before the U.N. pretending to think thoughts that necessitate war. I'm not making fun of these stumbles. It must be hard to enunciate or understand a daily

stream of words you have not written, creatively struggled with, or reflected upon prior to pretending, with all the world watching, to think them. The good thing about this lack of authenticity is that Bush may not be such a fool as to believe he can “rid the world of evil”; the horrific thing about it is that our military might and foreign policy are being deployed as if he can. This massive pretense does not imply that Bush is a liar. It implies, far more seriously, that the U.S. presidency itself has become a pretense, hence a lie.

This brings me back to the impossibility of teaching creative writing under the pretentious new National Security Strategy without seeming dissident. As a voluntary professional fiction writer and involuntary amateur liar, I’m here to tell you that fiction-making and lying are two different things. To write *War and Peace* required imaginative effort. To embezzle money from a bank does, too. It should not be necessary to explain even to Jesse Helms that this does not make Tolstoy a bank robber. *War and Peace* is an imaginative invention but also, from beginning to end, a truth-telling and a gift-giving. We know before reading a sentence that Tolstoy “made it all up,” but this making is as altruistic and disciplined as the engineering of a cathedral. It uses mastery of language, spectacular acts of empathy, and meticulous insight into a web of individuals and a world to present a man’s vast, haunted love for his Russian people. And we as readers get to recreate this love in ourselves. We get to reenter the cathedral.

Fiction-making and lying are two different things.

A lie is also an imaginative invention, but only on the part of the liar. In hearing a lie we can’t share in its creativity. Only the liar knows he’s lying. The only “gift” a lie therefore gives anyone is belief in something that doesn’t exist. This is the cruelty of all lies. There is no corresponding cruelty in fiction. To lie is to place upon the tongue, page, or television screen words designed to suppress or distort the truth, usually for the sake of some self-serving agenda.

THERE IS A SUPERSTITION — fed most savagely these days by politicians and news media — holding that what we hear firsthand is “true” or “real” and that what we merely imagine is “untrue” or “unreal.” News reports, for instance, are real, while the works of Tolstoy are not. This is nonsense. Insofar as literature enlivens imaginations, firms our grasp of reality, or strengthens our regard for fellow humans, it serves the world. And insofar as the president-character speaks scripts that deny life-threatening facts or erode the careful distinctions that sustain civil discourse and international goodwill, the “real” news report merely disseminates propaganda.

One of the greatest of human traits is compassion.

Reportage can, and daily does, lie. Even first-hand experience can lie. And “mere” imaginary experience can open us to truths that would remain inaccessible forever if we had to wait for reportage or experience to teach us the same truth. One of the greatest of human traits, for example, is compassion, which means, literally, “to suffer with another.” But this high art is seldom born in an instant thanks to “news” or to first-hand experiences. More often its seed is sown via a preliminary magic known as empathy. And empathy begins with a fictive act:

What would it be like to be that black girl four rows in front of me? a little white girl wonders in school one morning. Her imagination sets to work, creating unwritten fiction. In her mind she becomes the black girl, dons her clothes, accent, skin, joins her friends after school, goes home to her family, lives that life. No first-hand experience is taking place. Nothing newsworthy is happening. Yet a white-girl-turned-fictitiously-black is linking skin hue to life, skin hue to choice of friends and neighborhood, skin hue to opportunity and history. Words she used without thinking — African, color, white — feel suddenly different. And when her imaginary game is over they’ll still sound different. Via sheer fiction, empathy enters a human heart.

To be a Christian, a Buddhist, a Muslim, is to immerse oneself daily in unstinting

fiction-making. Christ’s words “Love thy neighbor as thyself,” to cite a famously ignored example, demand an arduous imaginative act. This deceptively simple line orders me, as I look at you, to imagine that I am not seeing you, but me, and then to treat this imaginative you as if you are me. And for how long? Till the day I die! Christ orders anyone who’s serious about him to commit this “Neighbor = Me” fiction until they forget for good which of the two of themselves to cheat in a business deal or abandon in a crisis or smart-bomb in a war — at which point their imaginative act, their fiction-making, will have turned his words into reality and they’ll be saying with Mother Teresa, “I see Christ in every woman and man.”

Mahatma Gandhi insisted that he was a Christian and a Hindu and a Muslim and a Jew. He also blessed, while dying, the Hindu fanatic who murdered him. In the Middle East, the Balkans, Pakistan, India, New York, Bali, we begin to see why. True, the ability to love neighbor as self is beyond the reach of most people. But the attempt to imagine thy neighbor as thyself is the daily work of every literary writer and reader I know.

Empathy begins with a fictive act.

Literature’s sometimes troubling, sometimes hilarious depictions of those annoying buffoons, our neighbors, may be the greatest gift we writers give the world when they become warm-up exercises for the leap toward actually loving them. Ernest Hemingway made a wonderful statement about this. “Make it up so truly,” he advised, “that later it will happen that way.” This is, I dare say, Christ-like advice, not just to those practicing an art form known as fiction writing, but to anyone trying to live a faith, defend the weak, or love a neighbor.

There is no man or woman, no nation, no mortal power on Earth capable of “rid[ing] the world of evil” as George W. Bush has vowed to do. The desire is preposterous. To act upon preposterousness with vast military might is evil. To acquiesce in such evil is somnolence.

One and a quarter billion Muslims share

Compassion as Dissent

(continued)

this world with us. The Bush administration seems to be seeking their mass conversion and surrender to the values of corporate Texas. I seek to remember Gandhi's declaration that he was a Christian, a Hindu, a Muslim, a Jew. I seek Dr. King's sense of brotherhood with people who surrender five times a day "to the Merciful, the Compassionate." I seek, in the face of my own or anyone's failure to live by the Gospels, the Koran, the sutras, to "make it up so truly that later it will happen that way."

To define compassion as dissident does not alter the Compassionate. To define mercy as unpatriotic does not change the eternally Merciful.

*David James Duncan is the author of the novels **The River Why**, and **The Brothers K**, and a collection of memoirs and stories, **River Teeth**. His most recent book, **My Story as Told by Walter**, won the **Western States Book Award** and was nominated for the **2001 National Book Award**.*

*Laughter is
carbonated holiness.*

*Confidence begins
when we focus
on those who have
led us out of hate
and madness,*

*people who never
gave up hope —
Dr. M.L. King,
Nelson Mandela,
Corazon Aquino.*

—Anne Lamott

"Act as Though the Condition you Desire is Already So..." (she cuts through)

by Corrina McFarlane

The following was first inspired by a Mother Jones article 'That's Militainment!' - What do you get when you mix the war machine and Warner Bros.? A Hollywood ending, of course' (Ian Frazier, July/August 2002)

The MoJo piece opened with a New York Times quote: "The Pentagon's image builders take Hollywood just as seriously as they take the news media, if not more so...In the wake of Sept 11, the military sees what television analysts call 'militainment' as one of the most effective ways to get its message across..." (March 31, 2002)

David Kupfer's 'Creating the Future' (see page 4) spurred the completion. So here's the article, from the 'archives' of American history:

The General American Strike on Valentine's Day of 2003 was a watershed event in a nation that was at the time, in the words of J.L. Chestnut, civil rights attorney, "the greatest experiment in democracy in the history of the world."

Barbara Marx Hubbard's words came ringing through, spoken with such gusto back at the Jerry Brown presidential rally (1992). "The American Revolution has barely begun ...barely begun!" she pronounced as the people there assembled almost lifted the roof. This time, she had no need to say we are talking nonviolent revolution. The citizens were awake and they were ready.

It was she who first presented the American public with the concept of a Peace Room in the White House. A Peace Room that would be as sophisticated as the archaic War Room, where once 'enemy' actions were tracked and mapped with no regard for the interdependence of all life. The Peace Room, she said, would be "mapping and tracking everything that's working, with the sophistication of Dr. Strangelove!" The Peace Room would be scanning for social innovations, for living embodiments of peace.

***"The American Revolution has
barely begun ...barely begun!"***

It was on this platform that she ran in 1984, her name placed in nomination, on the Democratic ticket, for the vice-presidency of the United States, though she was told, she wouldn't get one vote if that vote were her mother. Whilst still a young woman, her father said (was he throwing up his hands?!); "Barbara, you will be great in your field, just that your field hasn't been invented yet." Indeed, Paul Ray, author of *The Cultural Creatives*, called her "an American original . . . one of the great visionaries of our time."

An idea whose time has come moves to center stage

In 2002, Rep. Dennis Kucinich introduced the bill "To establish a Department of Peace" (H.R.2459), whose first mission would be "to hold peace as an organizing principle." When WomenRise for Global Peace <<http://www.womenrise.org>> presented their premier conversation café query "what can waging peace look/feel like?" a strong thread emerged with the host of bright possibilities: intention prevails.

Effective action for the future was finally being honed and the lesson learned. That in order to realize as yet ungrounded visions of a world that works for everyone, the collective must set a course and fine tune the details, thereby bringing the future into full Technicolor and, ultimately, full manifestation.

Most every member of the human race knows the phenomenon of a recurring bad

(continued on next page)

dream. If you cannot grasp the meaning or the message, the dream returns, replaying and replaying sometimes over years and decades, until a shift in perspective and/or understanding occurs.

The legacy of a tormented soul had dogged the Western world for more than half a century. Hitler was quite mad by all accounts, and the bombing of non-military targets and civilian populations was one measure of his psychotic personality. Yet this practice was quietly adopted by other commanders-in-chief of his era and subsequent leaders who purported to represent democracy, and replayed in various scenarios long after Hitler was out of the picture. "Collateral damage" became officially defined as the unintended consequence of an effort to bomb military targets but in fact was used as a military strategy to force a ruling power into some compliance or to break the will of a people.

2003 was a pivotal year for the 'great nations' of Europe and the Americas, whose realities were interwoven by history and design. The bad dream was in its final playing and the emergence into new territories of consciousness was palpable in the spring of that year across so-called old Europe and the (so-called) New World. In the whole vast territory of the United States of America, peace memorials in the very beginning of the 21st century were few and far between. Numbered among them were the MLK memorials in both San Francisco and DC, the Los Angeles Renaissance Peace Angel forged from melted-down guns, and the Collateral Damage statue in Santa Cruz, California.

*The single eye of the heart was key to
bringing a wisdom culture into real time.*

In Santa Cruz, as the world teetered on the brink of a war whose end could not be imagined, the once contentious Collateral Damage statue was barely visible through an unprecedented scene of flowers and prayers of intent. The offerings multiplying with every passing hour, running like a fast-forward movie, memorializing the people's now certain knowing that every choice matters and every minute counts.

Taking Valentine's Day for the General American Strike for Peace was truly inspired. Gregg Braden, author of 'The Isaiah Effect', pointed out that native people speak of 'the single eye of the heart' because, unlike the brain, the heart does not operate as two hemispheres with divergent functions. The single eye of the heart was key to bringing a wisdom culture into real time.

We can only ever trace a minute representation of the groundwork that led to the upsurge of conscious action and intent whereby the heart of America realized the true American dream. Here is scribed but one shimmering thread of consciousness that broke the spell of the Old World Order. Yet this was the holding pattern, the nature of what it took to arrive here. As the first decade of the new millennium drew to a close it was clear that we had lived out the David and Goliath mythology for the last time and had amazingly delivered our selves in one piece to enact and re-enact the ever-emerging story of the cosmos.

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Corrina McFarlane, corrina@cruzio.com ~ PanGaia, February 4, 2003

*From: "Public Conversations Project"
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A Call for Dialogue About the War

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Network News

The Systems Thinking/Chaos Theory Network of educators and systems scientists is facilitated by **Terry Burik, PhD, <tburik@aol.com>**. We are sponsored by the **Association for Supervision and Curriculum Development (ASCD)** which recently convened their annual conference in San Francisco. Terry will have a report in the June/July issue of PATTERNS. We will also have a questionnaire for readers who would like to participate in creating the future of PATTERNS.

In our last issue we mentioned the felt need for enhanced communication among the various professional societies in the systems field, educators, and the general public. Given enough energy, we envision an electronic as well as a print journal to serve an increasing number of people.

We are in the process of gathering a representative group of people interested in serving as Advisory Board members or as members of the Editorial Board. Doug Walton, a member of the International Systems Institute (ISI) has offered to develop the electronic journal. If you have any suggestions for the enhancement of PATTERNS or are interested in participating in the expansion efforts your input is deeply appreciated. Since 1996 we have tried to fill a niche that has not been served and are beginning to run out of steam (to use a mechanistic metaphor).

There is so much talent and much needed creative thinking that does not get communicated to an interested public. We hope that you will want to serve that cause.

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Ailing Dollar Strikes At Euro:

An Economic Perspective on the War

By Geoffrey Heard

Ed. Note: To survive in a complex world we must learn to think differently. We offer excerpts from one perspective received from Australia on the internet in March, 2003 at < <http://www.GuluFuture.com> > not as a simple answer but as one potential thread of an ambiguous dynamic which affects us all. We believe that it is through the emerging practice of public dialogue in which all threads are brought together that a truly democratic and sustainable future for humankind is possible.

Summary:

There are many things driving President Bush and his administration to invade Iraq, unseat Saddam Hussein and take over the country. But the biggest one is hidden and very, very simple. It is about the currency used to trade oil and consequently, who will dominate the world economically, in the foreseeable future — the USA or the European Union.

Iraq is a European Union beachhead in that confrontation. America had a monopoly on the oil trade, with the US dollar being the fiat currency, but Iraq broke ranks in 1999, started to trade oil in the EU's euros, and profited. If America invades Iraq and takes over, it will hurl the EU and its euro back into the sea and make America's position as the dominant economic power in the world all but impregnable. It is the biggest grab for world power in modern times.

Debate Building on the Internet

Despite the silence in the general media, a major world discussion is developing around this issue, particularly on the internet. Among the many articles: Henry Liu, in the 'Asia Times' last June, it has been a hot topic on the Feasta forum, an Irish-based group exploring sustainable economics, and W. Clark's "The Real Reasons for the Upcoming War with Iraq: A Macroeconomic and Geostrategic Analysis of the Unspoken Truth" has been published by the 'Sierra Times', 'Indymedia.org', and 'ratical.org'.

The key to it all is the fiat currency for trading oil. Under an OPEC agreement, all oil has been traded in US dollars since 1971 (after the dropping of the gold standard) which makes the US dollar the de facto major international trading currency. If other nations have to hoard dollars to buy oil, then they want to use that hoard for other trading too. This fact gives America a huge trading advantage and helps make it the dominant economy in the world.

As an economic bloc, the European Union is the only challenger to the USA's economic position, and it created the euro to challenge the dollar in international markets. However, the EU is not yet united behind the euro — there is a lot of jingoistic national politics involved, not least in Britain — and in any case, so long as nations throughout the world must hoard dollars to buy oil, the euro can make only very limited inroads into the dollar's dominance.

In 1999, Iraq, with the world's second largest oil reserves, switched to trading its oil in euros. American analysts fell about laughing; Iraq had just made a mistake that was going to beggar the nation. But two years on, alarm bells were sounding; the euro was rising against the dollar, Iraq had given itself a huge economic free kick by switching.

Iran started thinking about switching too; Venezuela, the 4th largest oil producer, began looking at it and has been cutting out the dollar by bartering oil with several nations including America's bete noir, Cuba. Russia is seeking to ramp up oil production with Europe (trading in euros) an obvious market. The greenback's grip on oil trading and consequently on world trade in general, was under serious threat. If America did not stamp on this immediately, this economic brushfire could rapidly be fanned into a wildfire capable of consuming the US's economy and its dominance of world trade.

How does the U.S. Get Its Dollar Advantage?

Imagine this: you are deep in debt but every day you write cheques for millions of dollars you don't have. Your cheques should be worthless but they keep buying stuff because those cheques you write never reach the bank! You have an agreement with the owners of one thing everyone wants, call it petrol/gas, that they will accept only your cheques as payment. This means everyone must hoard your cheques so they can buy petrol/gas. Since they have to keep a stock of your cheques, they use them to buy other stuff too. You write a cheque to buy a TV, the TV shop owner swaps your cheque for petrol/gas, that seller buys some vegetables at the fruit shop, the fruiterer passes it on to buy bread, the baker buys some flour with it, and on it goes, round and round — but never back to the bank.

You have a debt on your books, but so long as your cheque never reaches the bank, you don't have to pay. In effect, you have received your TV free.

This is the position the USA has enjoyed for 30 years. It has been receiving a huge subsidy from everyone else in the world. As its debt has been growing, it has printed more money (written more cheques) to keep trading. No wonder it is an economic powerhouse!

Then one day, one petrol seller says he is going to accept another person's cheques, a couple of others think that might be a good idea. If this spreads, people are going to stop hoarding your cheques and they will come flying home to the bank. Since you don't have enough in the bank to cover all the cheques, very nasty stuff is going to hit the fan!

But you are big, tough and very aggressive. You don't scare the other guy who can write cheques, he's pretty big too, but given a 'legitimate' excuse, you can beat the tripe out of the lone gas seller and scare him and his mates into submission.

And that, in a nutshell, is what the USA is doing right now with Iraq.

America's Precarious Economic Position

The USA's real economic condition is about as bad as it could be; it is the most debt-ridden nation on earth, owing about US\$12,000 for every single one of its 280 million men, women and children. It is worse than the position of Indonesia when it imploded economically a few years ago, or more recently, that of Argentina.

America's response to the euro threat was predictable. It has come out fighting. Obviously, the US could not simply invade Iraq, so it began casting around for a 'legitimate' reason to attack. That search has been one of increasing desperation as each rationalization has crumbled. The US's statements that it would invade Iraq unilaterally without UN support and in defiance of the UN make a total nonsense of any American claim that it is concerned about the world body's strength and standing. It is the boldest grab for absolute power the world has seen in modern times. America is hardly likely to allow the possible slaughter of a few hundred thousand Iraqis stand between it and world domination. President Bush did promise to protect the American way of life. This is what he meant. Locking the world back into dollar oil trading would consolidate America's current position and make it all but impregnable as the dominant world power — economically and militarily.

The 2003 conference of the American Society for Cybernetics will take place as part of a "Heinz von Foerster" week November 10-15, in Vienna.

As part of this week, November 13-15, the ASC will join with the University of Vienna and the Austrian Society of Cognitive Science in co-sponsoring an academic conference titled

Knowledge - Organization - Society

The thrust of the two events is to honor and build upon the work of Heinz von Foerster and of the Biological Computer Laboratory at the Urbana campus of the University of Illinois,

The ASC is also joining with the Institute for Systemisches Coaching und Training in co-sponsoring a public event, a conference titled

Organizing Organizations,

November 10-12.

ASC members will have privileged access to this event which comprises invited speakers and small discussion groups, workshops and playshops.

Both conferences will be conducted in English and ASC members are invited to submit papers. For further information see the ASC website

www.asc-cybernetics.org/organization/index.htm

Systems Thinking and Chaos Theory Network

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