

# Patterns

## From the Editor:

It seems to me that there is a unique quality associated with the loss of Bela H. Banathy who died peacefully last month at his home in Carmel, California. Aside from the fact that I personally feel a sense of being cut loose from some familiar mooring to chart my way in an increasingly turbulent sea, there is also a peaceful acceptance of the natural evolution of a life well-lived.



Bela was my tutor, my initiator into the new world of Systemics. He was the kind of teacher who modeled the wisdom that I sensed was imbedded in this great shift in perception and cognition which is required to become a 'Systems Thinker.'

I remember once when I complained at the discomfort I felt at not quite grasping what I intuited was there, he told me that he had been studying systems theory for 25 years and, as he said, "only now do I feel myself a systems thinker."

This statement has been a beacon for me, luring me out of the shallow harbors of systems talk and superficially safe interpretation. I know that to learn about systems theory may be "doing systems" but, because of Bela,

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## A TASTE OF SYSTEMICS

By Bela H. Banathy

Presented by the INTERNATIONAL INSTITUTE for SYSTEMIC INQUIRY AND INTEGRATION (IISII)

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THE FIRST INTERNATIONAL ELECTRONIC SEMINAR  
ON WHOLENES

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### WHY A SYSTEMS VIEW?

The second half of the twentieth century is marked by massive changes affecting all aspects of our lives. We are experiencing the major societal transformation from the industrial machine age to the post-industrial information/knowledge age. These changes and transformations are reshaping our thinking and recasting the way we view ourselves, the systems of which we are a part, the environments in which we live, and *the way we view the world.*

A world-view (window to the world) is like a lens through which we perceive the landscape of life that becomes our reality. Those who look through the lens of the previous era see their own reality very differently from those who use the lens that the new era has crafted.

This "view of the world" (world-view) has many dimensions: the socio-cultural, the socio-technical, the socio-economic, the organizational, and the scientific just to name a few. These dimensions interact and mutually influence each other expressing that interaction as an emergence of a *new* world-view very different from the previous era - the era of the industrial society.

This change from one era to another is often called a "paradigm shift."

When a new stage emerges in the evolution of society, such as the case around the midpoint of this century, the continued use of the old paradigm, the old-world-view-lens, creates ever-increasing problems; for example, the social systems such as our educational activity systems that still operate by the design of a by-gone era. They operate in a continual crisis mode, and eventually face obsolescence. But they *could* frame a new mind set, learn to use the new lens of the new era, and acquire a new thinking, knowing, and doing based on the new world view.

Over the last four or five decades, we have been faced with increasingly more

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### Season's Greetings

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my goal is to *BE an integrated systems thinker*, ever emerging through increasingly conscious connections within Universe. Bela taught me to understand that;

*The heart unites whatever mind separates, pushes on beyond the arena of necessity and transmutes the struggle into love.*

Nikos Kazantzakis, 1923

Bela describes his evolutionary journey in the pages of *Systems Research, the journal of the International Federation for Systems Research (vol. 5 No. 1 1988 Pergamon Press, N.Y. pp. 77-83)* There is a consistency in his personal story, reflecting his "primary commitment to systems inquiry in scholarship and practice.

He writes of the evolution of a systemist, a personal story, "a reflective account of periods of time which I spent in three countries. Each period was marked by a transformation when new insights, perspectives, understandings, knowledge and skills complemented and transcended those previously attained, resulting in their ever expanding and upward spiraling reorganization at higher levels of complexity. These periods reflect the evolution that took place."

Growing up on the Great Plain of Hungary in a family culture of pursuing excellence, an intensive church life, a rich Scouting experience and a broad-based education in the humanities, language and sciences shaped his world view "from which the major evolutionary theme and imperatives of my life emerged..." Among these, he lists two that particularly resonate in my mind with what I experienced in knowing him.

- Serve others, seek what joins us together and not what separates us.
- Be witness in words and in action to the ideas that there are no limits to learning, to the enrichment of our inner quality of life, and to love.

He writes; "From the integration of these imperatives emerged my overarching evolutionary theme, namely, that life is a journey from being to becoming, an always ongoing move toward the ideal. For me, this notion of 'infinity' is best portrayed metaphorically in the legend of hunters of antiquity, who followed—but never hunted down—the miraculous white stag, which led them in the joy of the hunt in the hope of reaching the promised land."

complex and pressing problem-situations, embedded in interconnected systems operating in dynamically changing environments. In addressing these problem situations and working with their relevant systems, we have learned to recognize the limitations of the perspectives, methods, and tools of the traditional scientific orientation.

### CONCEPTUAL FOUNDATIONS

The mind-set of the industrial era has its roots in classical science - often associated with Newton - that emerged some three hundred years ago. Disciplined inquiry during the last three hundred years, inspired by the Cartesian-Newtonian scientific world view has sought understanding by taking things apart, by seeking the "ultimate part" and groping to see or re-construct the whole by viewing the characteristics of its parts.

This *reductionist* orientation was not able to grasp "wholeness" which *emerges* from the mutual interaction of parts, where the part gets its meaning from the whole and by its interaction with all the other members of the whole. The properties of the whole cannot be seen from the viewpoint of the parts.

Today, we realize that the reductionist method of analysis has to be complemented with synthesis and with expansionism, aimed at understanding larger and larger wholes in which our systems of interest are embedded.

### *We are faced with the organized open-system dynamics of the world of complexities*

Classical, traditional science is based on the *certainty of determinism* and the confidence in *prediction*. However, Heisenberg's Uncertainty Principle and Einstein's Relativity have humbled our expectations for prediction. The principle of uncertainty has helped us to understand that the observer cannot be separated from what is observed. This is obvious in physics and much more so in social science.

Traditional science's unidirectional *cause and effect* is inadequate to deal with the many interactive variables of complex, dynamic systems. We know now that in such systems, the dynamics of *multiple, mutual* and *recursive* causation operate.

Classical science saw systems to be basically closed, having only limited and highly controlled interaction with their environment. However, living systems are open systems, having intensive interactions with their environment. Closed systems are governed by *negative* feedback, essentially internal relationships maintaining the status quo, while open systems operate by *positive* feedback, essentially external relationships allowing for growth and change.

Traditional science was unable and unwilling to consider *purpose* and *meaning* which, in the emerging view of disciplined inquiry, has a guiding role. And where dominance once was the purpose, there is now a search for establishing a grand *alliance* of science, philosophy, art, and religion.

In human activity systems these insights have led us to aspire to *understanding* rather than predicting, problem *management* rather than problem solution, and *purpose seeking* as a mode of thinking and action rather than determinism.

Classical science defined complexity in terms of the multiple parts of a system, while systems science defines it based on multiple interactions with the environment and the interactions among parts within the viewed system.

The technologies of *manufacturing things* worked well in managing the organized simplicity of the closed-systems production of the "things world" of the machine age. This mechanistic/deterministic world-view manifesting itself as technology drove the industrial revolution. We learned to manage things. But those technologies became useless, once we were faced with the organized open-system dynamics of the *world of complexities* emerging in this new era.

We study the social system in a variety of fragmented disciplines. This separating-into-disciplines approach can provide only partial interpenetration of the system studied and sets forth descriptions based on disparate theoretical frameworks. We study

our social systems through the lenses of sociology, psychology, economics of education, the anthropology of cultures, socio-economics, organizational and communication sciences, political science, and so on.

Such compartmentalized inquiry, with the use of widely differing orientations, methods, and languages of the separate disciplines, results in unintegrated and incomplete knowledge of the characterization of what a social system is as a whole. A particular discipline can address only a narrow aspect of the whole. Social science scholarship typically focuses on only a few variables, studied in isolation by the experimental methods of classical science. Thus, we cannot consider the complex interactions and systemic interconnectedness of the various components that integrate into the whole. We cannot adequately portray the mutually inter-acting and recursive dynamics, the relationships of the processes of our complex social systems. We cannot observe properties of the whole from an analysis of just the parts apart.

For all the reasons portrayed above it is suggested that we are faced with the reality that the old ways of thinking and viewing do not work anymore. We have to be willing to consider the application of systems thinking, systems inquiry, and the use of the systems view for both human systems *scholarship* and *practice*. In today's world, the methods of *creating, organizing, and using information and knowledge* are the requisite intellectual technologies.

The *internalization* of this new type of inquiry in our thinking manifests itself in the *systems view*, and its activation in social systems will lead to *practical systemic action*.

#### SYSTEMS INQUIRY

The systems view is a world-view that is based on the discipline of systems inquiry. Central to systems inquiry is the concept of *system*. In the most general sense, system means a configuration of parts connected and joined together by a web of relationships. The Primer group defines system as a family of relationships among the members acting as a whole. Bertalanffy defined system as "elements in standing relationship."

The joining and integrating of the web of relationships creates *emergent properties* of the whole. These properties of the whole may not be found in any analysis of the parts. This is the *value* of systems theory. The *wholeness* that can't be seen in the parts.

*We cannot observe properties  
of the whole  
bit by bit.*

Systems inquiry is a system itself. As a conceptual system, it has four inter-related and internally consistent aspects acting as a whole: *systems philosophy, systems theory, systems methodology* and *systems application*. Furthermore, systems inquiry embraces two kinds of disciplined inquiry; it's conclusion-orientated inquiry mode produces systems knowledge, its decision orientated inquiry mode applies systems knowledge to the formulation and selection of systems methods that address real-world situations. "As a conceptual system, it has four interrelated and internally consistent aspects."

Systemic philosophy asks the question, "How can we understand systems?" With the perspectives of systems philosophy, we look at the world in terms of facts and events in the context of wholes, and we understand them as integrated sets purposefully arranged in systemic relations. In contrast to the analytic, reductionist, linear, single cause-and-effect view of the philosophy of classical science, systems philosophy brings forth a reorganization of ways of thinking and knowing perceived reality, a view manifested in synthetic, expansionist, dynamic, and multiple/mutual causality modes of thinking and inquiring, how things work more than what things are.

Each scientific discipline in classical science has developed its own theoretical scheme. Systems science, on the other hand, transcends those disciplinary boundaries, seeking alikeness (or isomorphy) of principles, concepts and laws that exist in

In an interview for PATTERNS, September, 1996, (see [www.haven.net/patterns/](http://www.haven.net/patterns/)) he and his wife, Eva, spoke of the five years as refugees in Austria, having been forced to leave their homeland. They started scout programs in the refugee camps and, with the help of international church organizations, established in Collegium for the education of youth. Bela was ordained a minister and in 1951 they emigrated to the United States with their 4 children.

Learning a new language, a new culture, and engaging in a new field of teaching (linguistics, instructional design and leadership development) became the challenge that led Bela to the general theory of systems and the development of evolutionary consciousness.

In his Systems Profile he writes; *"By the end of my second decade of systems work, I believe I had developed systems consciousness and I had integrated into my thinking and experience the systems idea. I had also learned to 'frame' my own systems windows through which to perceive and understand myself and whatever became important for me. Can all this be condensed into a systems education program? Or does it have to be lived and experienced as i did? I am not sure, but I hope that we can develop learning resources that can speed up the process."*

His life has been dedicated to answering such questions grounded in the realization that scholarship gets its real meaning from its use in service to humanity.

As founding director of the International Systems Institute and Professor Emeritus, at Saybrook Graduate School in San Francisco he has been a beacon of hope and a loving guide to many. His service on numerous International Boards as author of several books, articles and research reports, .

A partial list of his books can be found on p.5.

In this memorial issue of PATTERNS we are including an early article by Bela because it is such a clear presentation of the difference between classical science and the new science which has emerged in order to deal with the evolving complexity of our times. It is important to note that so much of the new learning in systems science is often available to the general public via the *world wide web*. By bringing you the information in this publication we hope to encourage more public dialogue around the importance of systems thinking in our troubled times.

The **International Society for Systems Sciences** listserv at <www.issues@iss.org> provides much thoughtful dialogue. In this issue Systems Scientist **John Kineman** responds to the ideas of **Jamie Rose** who has contributed an article, *Is Reality Complex?* especially in honor of Bela H. Banathy. (see p.8)

**Gordon Rowland**, long time colleague of Bela's, sends us his memorial contribution on p.10. Gordon is a Fellow of the **International Systems Institute** founded by Bela, a research group dedicated to developing knowledge of systems design applicable in educational contexts.

With this issue we continue our special section (pp. 6 & 7) containing membership news from the **American Society for Cybernetics** which will be a regular feature of PATTERNS.

We begin an article by Antonio Rossin, Neurologist and Family Doctor in Rome, Italy, and Kerry Miller titled, *Pragmatic Cybernetics: towards a Dialectical Education*

<www.flexible-learning.org>

This will be an experiment in serialization of articles and we welcome your feedback as to the desirability of this form of journalism.

*If one takes care of the means, the end will take care of itself.*

*Gandhi*

Each scientific discipline in classical science has developed its own theoretical scheme. Systems science, on the other hand, transcends those disciplinary boundaries, seeking alikeness (or isomorphy) of principles, concepts and laws that exist in the various realms of experience. We *integrate*, within the framework of systems theory, the findings of the various disciplines. *That is the unique power of systems theory*. With this power we can understand and work with the insights and knowledge generated by the disciplines that are relevant to our domain of inquiry. The organized arrangement of these "general principles" constitutes a *General Systems Theory- an exposition applying to all systems*.

Systems Methodology differs from the methodologies of the disciplines in that the methodology of a particular discipline is clearly identified and is to be adhered to. In Systems Inquiry, on the other hand, one selects — from a wide range of approaches, methods, and tools that best fit — the *type* of system, the *purpose* and *nature* of the inquiry and the specific problem *situation*.

**Systems Methodology** has two domains of inquiry;

(a) the study of methods by which we pursue systems scholarship and produce systems knowledge, and

(b) the identification and description, methods, and tools for applying systems theory and systemic thinking in the analysis, design, and development of complex systems.

More specifically, this task is twofold:

1) to identify, characterize and classify the system of our interest, the system of issues embedded in our system, other systems that interact with us and the larger system (the environment) that embeds our system.

2) to select, identify and characterize specific strategies, methods, and tools appropriate to the work with our system.

When we talk about **Systems Application** we are considering the application of systems approaches/models/methodologies/methods/tools in a specific *functional context*.

*We integrate,  
within the framework of systems theory,  
the findings of the various disciplines.*

In summary, by *observing* various types of systems and studying their behavior, we can recognize characteristics that are common to all systems.... This process of starting from *observation* and arriving at the *construction* of systems models constitutes the first stage of developing a systems view.

Thus we gain insights and ideas for shaping the future of our system by using models to provide a comprehensive characterization, a plan for development and implementation of our new model, explicitly stated and shared perspectives to ensure the attainment of consensus, co-participation in design to enhance commitment, commitment to idealized design so that its realization can be evolutionary, learning by and from our design, and, as new realities emerge, reimagining the ideal like a horizon forever moving ahead of us.

We design systems that value and serve people. We design systems that build and nurture human qualities. We believe that it is our destiny — and it is within our power — to guide our evolution and the evolution of our systems and to shape our individual and collective future by design. Therefore, we should embrace systems design as an essential part of our professional repertoire. We can attain this by developing organizational capacity and individual and collective capability in systems design...

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## REFLECTIONS:

The viability and relevance of the educational profession will be judged based on the extent to which we spearhead the evolution of education, place ourselves in the service of transforming education, and help create just systems of learning and development for future generations. We now realize that systems design is a missing inquiry in education. Confronted with "new societal realities" and new educational requirements of a rapidly changing world, people look to the professional education community for guidance in the design of their educational systems. This expectation confronts us with the challenge to individually and collectively acquire systems thinking and develop competence in systems design and practice. Education creates the future, and there is no more important task and no more noble calling than participating in the creation.



The full text of this article can be accessed at:

[http://www.newciv.org/ISSS\\_Primer/seminar.html](http://www.newciv.org/ISSS_Primer/seminar.html)

### *We Cannot Pour New Wine Into Old Wineskins*

*The new wine metaphor in the Bible was used to represent the "New Testament," which cannot just be plugged into the old design of religious practice. The new thinking we speak of is the "new wine" that once defined and made explicit will guide the creation of the new image and the new design of education.*

*In his eloquent speech to the US Congress, Czechoslovakian President Havel Vacek (1990) voiced his vision for the world in which history has accelerated, and we should believe that once again "it will be the human mind that will notice this acceleration, give it a name, and transform those words into deeds."*

*His message is a message to us who seek a new vision of education.*

*Once we become open to the emergence of "new thinking" by a conscious and purposeful exploration of the new world view that has guided the accelerated emergence of the new stage of societal evolution, then we can "give a name" to a new image of education, develop new core ideas about education.*

*The image will then guide us in the creation of the new design, so that we can transform the image and the design "into deeds."*

*Bela H. Banathy*

#### Partial Bibliography

*These books show how very strong and consistent Bela Banathy's vision was.*

Developing A Systems View of Education: The Systems-Model Approach.  
*Intersystems Publications, Seaside, California. 1973*

Systems Design of Education: A Journey to Create the Future.  
*Educational Technology Publications, Englewood Cliffs, New Jersey. 1991*

A Systems View of Education: Concepts and Principles for Effective Practice.  
*Educational Technology Publications, Englewood Cliffs, N.J. 1992*

Designing Social Systems in a Changing World.  
*Plenum Press, New York. 1996*

Guided Evolution of Society: A Systems View.  
*Kluwer Academic/Plenum Publishers, N.Y. 2000*

The **Open University Systems Group** is a group of academics committed to the study and application of systems ideas.

Visit <http://systems.open.ac.uk/page.cfm> where they carry on activities that extend from addressing significant social, ecological, and environmental issues to understanding the implications of computing and networking technology.

As a part of the Centre for Complexity and Change within the Faculty of Technology of the Open University, they have done pioneering work in subject matter and pedagogical models, and also in the use of the internet for supporting open learning.

Their research encompasses not only conventional, publication-driven inquiry but also 'action research' helping people in organisations to engage with poorly-structured or controversial issues.

Of interest is the systems open study group which provides readings from various seminal thinkers in the systems field with follow-up interactive discussions. The list includes such giants as Bateson, Churchman, Capra, Ackoff, Vickers, vonBertalanffy, Ashby, Beer, and Boulding among many others. This provides an excellent opportunity to develop an understanding of the foundations of "the new paradigm."

*For example, they write:*

*This week we have two short readings: Heinz von Foerster 'Cybernetics of Cybernetics', from 'Understanding Understanding: Essays on Cybernetics and Cognition', Springer-Verlag New York, Inc. 2003 (reproduced from 'Communication and Control', Krippendorff(ed), Gordon and Breach, New York, pp 5-8 (1979)*

*and*

*Heinz von Foerster 'Cybernetics', from 'Understanding Systems: Conversations on Epistemology and Ethics', Kluwer Academic/Plenum Publishers, 2002*

*The discussion will open on Tuesday 25th November:*

*from Karen & Magnus*

*<http://systems.open.ac.uk/page.cfm?pageid=resource-study>*

*From the ASC membership....*

Alan Stewart and the 'Cybernetics Group in Adelaide' have recorded one of Lloyd Fell's lyrics on <http://www.pnc.com.au/~lfelladelaide.html> He writes;

**SONG OF AUTONOMOUS UNITIES**

Many Australian students of autopoiesis (young and old) are familiar with this little song. It has provided light relief at times when talk of 'histories of structural coupling' and 'objectivity in parentheses' became too heavy. But there could be something else about it, too. I say to students that listening to a chorus is an academic exercise, whereas singing it aloud is to experience its meaning. This is a bouncy 6/8 which most people seem to enjoy joining in - even with the long words - and it's a way to ease into the interesting process of singing as part of a network of conversation.

.....

*I am an autonomous unity  
My structure is very profound.  
While everything else  
is a line to me  
To me I am perfectly round.  
My history mystery I will unveil  
Believing I know as I do  
This world I bring forth is my own  
and I love  
Your autopoietical you*

*Not hypothetical,  
just parenthetical,  
Autopoietical you.*

*If the world is to be healed  
through human efforts,  
I am convinced  
it will be by ordinary people,  
people whose love for this life  
is even greater than their fear.*

*Joanna Macy*

**American Society for Cybernetics  
Membership News**

***W. Ross Ashby Centenary Conference  
University of Illinois at Urbana-Champaign  
March 4-6, 2004***

This year marks the 100th anniversary of the birth of W. Ross Ashby (1903-1972), one of the founders of cybernetics and general systems theory, a pioneer in information theory, machine learning and self-organizing systems, and the author of two highly influential books, *Design for a Brain* (1952) and *An Introduction to Cybernetics* (1956).

Ashby worked as a psychiatrist in Britain for much of his life, but spent some of his most productive years, 1959-1970, as a professor of Electrical Engineering and Biophysics at the University of Illinois at Urbana-Champaign, affiliated with the Biological Computer Laboratory directed by Heinz von Foerster.

The sponsoring group is the U of I's Program in Science, Technology, Information and Medicine. (*see <http://www.uiuc.edu/unit/STIM/> where the program will be continually updated*).

The conference will begin on the evening of Thursday, March 4th, with a keynote lecture by **Stuart Kauffman**, of the Santa Fe Institute. There will be a second keynote lecture by **Stephen Wolfram**, President of Wolfram Research, on the evening of Friday the 5th. The main body of the conference will consist of a series of invited lectures and panel discussions over the course of Friday and Saturday.

Speakers will include Ashby's former students, historians of science, and leaders in the fields of information and systems theory; topics will range over Ashby's life and work and his legacy in the areas of cybernetics, information flow in complex and dynamic systems, learning, and self-organizing systems.

Confirmed speakers are;

**Stuart Kauffman**, Santa Fe Institute, **Stephen Wolfram**, Wolfram Research, **Stuart Umpleby**, George Washington University, **Klaus Krippendorf**, Annenberg School for Communication, University of Pennsylvania, **Slava Gerovitch**, Massachusetts Institute of Technology, **Peter Cariani**, Harvard Medical School, **Don Gause**, Binghamton University, **Andy Pickering**, University of Illinois, **Peter Asaro**, University of Illinois. Others will be announced later.

**Announcement of New ASC Positions**

***Vice President for Membership***

*The VP will be responsible for the following jobs:*

- *Maintain the membership database.*
- *Handle new and renewing memberships.*
- *Prepare labels for PATTERNS, our new ASC newsletter.*

*If you have any questions or problems related to any of the above, contact Robert Martin at <[rmartin@truman.edu](mailto:rmartin@truman.edu)> who is currently serving as VP for Membership as well as ASC Secretary. We hope to make these separate board positions in the future, pending membership approval.*

*Newsletter Editor Barbara Vogl is looking for articles, commentaries, etc. to include in the newsletter which goes to all ASC members as well as subscribing educators, "new" scientists and the interested public.*

*Contact: <[bvogl@cruzio.com](mailto:bvogl@cruzio.com)>*

# Pragmatic Cybernetics

by Antonio Rossin and Kerry Miller

## Background

In thinking about the advanced levels of integration, one must ultimately consider the individual not as a single corporate body, but as the simple element of a complex system. This much I am familiar with in my role as a medical operator with functions of diagnosis and care, I have to consider the sick person, as the subject of my professional interest, not merely as an independent unity - as once I was taught - but instead as one part of a wider and complex system in which different components interact together to form the subject of a particular scientific discipline.

In this wider world the laws which the state of health or of illness of my patient would have hypothetically depended on, were not exclusively those which I studied in the books of Medical Pathology and Pharmacology, but the general laws on which the order of the whole system depends, and which should be valid and verifiable for each different discipline. I refer here to the universal laws of Physics and Mathematics. Therefore, even if with an empirically uncertain step, I entered the interdisciplinary field where the official language was not yet that of the medical discipline I more or less knew, but that of whoever studies the general laws of systems, that is, the language of physicists and mathematicians. So, even without possessing the fluency this difficult language deserves, I have tried to extract some useful basic notions which I am now going to expound.

According to this universal language, both the sick individual and a social system presenting tension increase or discomfort can be called a 'disordered system with relatively high level of entropy'; and, vice versa, the healthy person or the collectivity each can be termed an 'ordered system with low level of entropy.' In turn, what is called 'information' would be the therapeutic action re: the sick person and the cultural input re: any insufficient social system, so as to allow the increase of order in the system, thus lowering its entropy. The same information can therefore be called "neg-entropy".

At first, this writing was to have been titled "The bionic problem". However the term "Cybernetics" sounds more appropriate, because while Cybernetics (from the Greek Kybernetik, [tekhne]) is literally "the art of the helmsman" or the art of giving information to the sailing system, the dictionary goes on to say, "Cybernetics: a branch recently developed from pure and applied science to study the transmission of command and control signals for electric circuits and mechanical systems, *as well as the stimuli for the living beings*" (emphasis added). Indeed, as Norbert Wiener (who brought the word into modern usage) derived the mechanical application from his study of biology, it was only appropriate that I -- now equipped with the "pure scientific" outlook -- returned to look again at living systems.

*I asked myself what information could be useful to procure order in such systems. Wanting to use a more common language, my cybernetic problem was therefore to understand which way the boat should turn, and consequently to which side the rudder had to be moved. The rewards following the solution of this problem would not be negligible: on an individual level, it could deal with primary prevention against the psychological dependence and drugs addiction, and on a social level it could yield a solution to today's ecological, political and environmental problems.*

## Psychical Framework

At that point, remembering my practical functions of diagnosis and care, I asked myself whether the same patient would not be considered a system with high entropy level (like sailing without a rudder) when s/he does not know autonomously how to put herself in order, getting so to speak voluntarily sick. For instance, drug addictions, and to some extent the mental illnesses, must actually be considered among such sicknesses, as well as the so-called 'stress diseases' which comprise the domain of Psychosomatic Medicine[6].

Similarly, a social system, having a lack of adequate information, or of learning capacity, or it may be, a low level of culture and civilization, raises its own entropy to excessively high levels of disorder, of tensions and of environmental excessive maladjustment. I asked myself what information could be useful to procure order in such systems. Wanting to use a more common language, my cybernetic problem was therefore to understand which way the boat should turn, and consequently to which side the rudder had to be moved. The rewards following the solution of this problem would not be negligible: on an individual level, it could deal with primary prevention against the psychological dependence and drugs addiction, and on a social level it could yield a solution to today's ecological, political and environmental problems.

This possibility sounded very intriguing to me. I therefore dared a trip into the world of Cybernetics to seek for an answer, and I drew the theoretical solution which I am now presenting to you. As for the language used, I apologize. I want it to be general, but standing as I do between the medical art on one side, and cybernetic Science on the other side, I have tried as well to adopt a language compatible with both sides. I hope I have not sadly disappointed both... *(To be continued in next issue of PATTERNS)*



## Is Reality Complex?

*The following is a slightly reworked version of an October 2003 post that Jamie Rose made to the complexity list [Complex-M], which he has specially prepared for PATTERNS in honor of Bela H. Banathy. <issues@iss.org>*

Dear Complexians,

It's all well and good to retro-examine events and try to identify if one decision methodology over another might be / have been 'better'. In the case of Iraq, as well as other political-economic venues around the world [past-present-future], it remains my contention that pure analysis omits two singularly important criteria, and does so by giving total weight to what might be phrased 'automatic internal inertia'.

The problem centers around an inadvertent tendency towards closure. A problem not new, and definitely not unknown throughout human experience, history and even common sense.

Complexity mathematics has jolted the collective mindsets of the sciences and the public by exposing a kind of quantum leap effect in the experienced {pun intended} world. Wholly new qualia are generated from special relationships of prior simpler-states. [Would it be proper to call them, in a homeomorphic way, prior 'axioms'?! :-) I wonder.]

But some causal-generation relation process stays resident even during the production of novelty. So we retain tradition while leaping to things totally unprecedented. And there seems no clear rule yet to juggle both or to decide what measure of each to apply in different applications and situations.

Scientific high-comfort comes from recursion and reliability, so in that regard, there's the constant searching for simple singular patterns and rules to follow. Intricately complex but, qualitatively not-messy or more unpredictable than can be coped with or adjusted to and still keep prior order.

In Complexity analysis, this is carried over into the presumption that there is some dominating internal driver, accomplished by the mathematical relations internal to the system under study. A crisp clear mathematics 'inside' will force a very specific evolution of states and subsequent 'system behavior'. All that is

necessary to map future outcomes is to identify, (verify), and apply the 'rules' uncovered.

What this reasonable if mechanical/rote thinking does is to ignore a reality that results from the core construction of behaviors. Systems that 'endure' do so on a statistical basis in which, (a) time and (b) route to goal region, are variable-and-are partially under the control of the system itself...in its newly 'complexed' form.

First, I have to make it clear, that functional competency of a system is not a rigid fixed one state or several states parameters. It is a -range- of close-enough values .. a tolerance range .. within the system remains viable and capable of future interactions - as that integrity-. So "goals" are not strike points or narrow target states, they too are ranges wherein viability is high, strong, or even minimal. Think about the adage 'timing is everything.' It holds as much or more so in Complexity.

***We live in an era of  
'value by fiat',  
worth by association  
and 'sufficient equity'.***

The Second Iraq War was driven by commercial and political considerations far beyond Saddam Hussein and Arab interests in the Middle East. The urgency of seizing control of that region, be that region even in social turmoil, was a decision based on concerns over challenges to the US dollar by the Euro, future time and conditions considerations necessary to build several stable oil pipelines from and through the "-istans", concerns over the imminent economic pressures that are building in Asia as China transitions to a member of the global capitalist economy, the maintenance of global trade as different and newer cultures join the middle-class, concerns about global resource diminution and over population pressures, and not last, but certainly one of

my favorite categories, in finance, the issue of capital creation (with concurrent concerns about who controls such capital).

We live in an era of 'value by fiat', worth by association and 'sufficient equity' involvement. The money supplies have to be sufficiently large, maintained by psychological confidence, to saturate a sufficiently large extent of the populace engaged members in order for them to acquire by purchase, that which is no longer acquirable by individual's transactions with the natural world and environment.

And these things tie back in with biological dependency on basic sustenance, and the capacity of the economic juggernaut to distribute - on time - the necessities of life and all that goes into preservation of social order ... in local regions as well as globally.

The pressure to have 'something' happen in the middle east outstripped perfect preparedness. With the attitude being, 'once we're "in" there will be time to fix loose ends and dropped balls'.

And as far as I can see right now, there are few as adept at long range planning and multipronged intervention coordinations as certain transglobal interests.

Reality, dear friends, colleagues and Complexians, isn't just 'complex', it is cognitive. It is sentient to its own behaviors and future best-interests, to the extent that any complex \_adaptive\_ system can be and is. It is oriented to paces and timings of actions, optional versus optimum sequences, to cultural reactions and cues, to motivators and to acts that 'must' happen whether there is community concurrence or not.

However, there isn't a nation or a people on this planet that doesn't subscribe to the enunciated democratic ideals of "life, liberty, and the pursuit of happiness". The only difference is the -right- to self determine what those three things are, even if they aren't in strict concurrence with what other people desire.

*(continued on next page)*



In a global lifespace where there is relatively limited elbow room, the issue is how to go about building human and environmental potentials that allow the most for the larger populations possible. And that means stable global commerce with competitions but not conflicts, a house in order. Unfortunately, we have some rough years of strained transitioning ahead.

The rightness of accomplishing a coordinated global economic population can only be done, and will only have high meaning, when the integrities of individuals, local populations and the environment which is crucial to the sustenance of the members and the whole, are respected and protected.

*The dignity of each person  
is crucial to the dignity  
of the "society"*

Imposed situations will not work forever. Manipulated control of populations cannot be sustained. No one can 'force' a cell of their body to function healthily; that impetus and drive has to come from the cell itself, bathed in the nutrients and companionship around it. For humanity, those things are resources and the funds for acquiring resources and a healthy milieu to be in. And as crucially important, the commitment to participate and be involved, not be forced or strong-armed into it.

The dignity of each person is crucial to the dignity of the "society", whether that society is defined as a nation, a community, or a whole of humanity. We sustain one another in participation.

When dignity and respect and decisions are distributed, that is the highest condition of health a society can have. Then economic synchrony and political synchrony are maintainable, even if cultures choose alternative ways of enjoying life.

Right now we are in a transition phase when economic synchrony is paramount. We are also in a threshold phase in which cultural co-dignities will be required, cannot be denied, and will have to be adjusted together and openly.

Can we do this? Absolutely. Because 'we' are resilient, flexible, and adaptive.

Aren't we? We can put up with a lot, because a healthy future promises a lot. :-)

We just have to remember that second order emergent properties become viable criteria sets all their own and are involved in feedback to/with the original parameters. (!) The prior-internal drivers that got us here don't function alone after that. They've been 'contaminated' with second order meanings and purposes and properties to maintain. :-)

Design Culture in this regard isn't just some handwaving technique to have members in a community 'feel good' together. It is a principled method of participative dignity, and a guideline for inter-member behaviors which address the needs and goals of individuals and the community, however that community may be defined.

A great enterprise, a great commercial endeavor, can never really be 'great' if it doesn't service the satisfaction and security and health quotients of humanity.

Choice and fulfillment are the required companions of efficiency and profit. Valid participation in the design and evolution of the social milieu we are involved in will therefore prove to be the backbone of any enduring human social inventions and explorations of which we are capable.

The inner inertia and roles, the subsequent emerged opportunity spaces, working co-actively together, inventing on the fly, adaptive to the moment, decisive from the archives of past experiences, and creative during encounters with the new and unknown. Trustful in one another, and stewarding for one another, irrespective of past differences.

Mindful now only of one thing: the future--together.

*James (Jamie) Rose  
Ceptualist  
Ceptual Institute  
10/26/03*

*James N. Rose is a General Systems theorist, active member of ISSS, one time student of past president Lawrence Slobodkin, founder/director of the Ceptual Institute and developer of the Integrity Paradigm. Ceptual Institute is currently a web-presence at <<http://www.ceptualinstitute.com>> where Rose and other integrated systemic thinkers from many fields are showcased.*

*John Kineman responds to the ideas  
of Jamie Rose.*

*He writes, "What I want to add is the idea that we are also both individually and collectively ignorant of the future or the "right" solution to these (complex) problems. Any solution is a creative emergence involving the whole of society. The greatest wisdom thus seems to be to facilitate collective problem-solving with full stakeholder involvement, and thus the "fix" comes down to removing the blocks for appropriate and equally weighted inputs — getting everybody to the table in an effective manner, and controlling those who want to dominate the decision making. The latter threat resides at present in the large corporate infrastructure and its ability to buy political favor...."*

*So, let me suggest that the human system is a living system and that all living systems operate by adaptation and self-interest (altruism being the result of a broadly defined self-interest), that is partly anticipatory and partly reactive. Both are involved in real change.*

*This means that:*

*a) while information is important, mis-information has an equal impact. It is mis-information that we can most quickly and directly manage, by taking steps to prevent it; and,*

*b) while action is important, inappropriate action has an equal impact. Again it is inappropriate action that we can most quickly and directly manage, by applying precautionary principles.*

*I see the problem as a combination of:*

*a) mis-information, which is promulgated intentionally to serve limited interests and thus to prevent the larger collective and long-term interests from having an adaptive effect on the system.*

*b) mis-action, which is conducted without review to serve limited interests and thus to pre-empt more general goals and values, thus having the effect of preventing them from affecting how things adapt.*

*In this analysis, any singular interest allowed to become too strong - i.e., amassing too much power via political, corporate, or financial channels, has a large potential for destabilizing natural adaptation. This includes, by the way, intellectuals promoting their ideal solution for uptake by everyone else. These are the impotent elite engaged in a frustrating exercise. On the other side, it also includes the political cowboys who are all action and no brains. But I think large corporations currently harbor the bulk of these obstacles.*

*We must act. Even not acting is acting (and sometimes the appropriate action). So informing action with educated thinking seems to be the optional part of the equation, and in particular allowing everyone the right to participate in that collectively. That's where I think democracy comes in. It is supposed to be a means for distributing power.*

*Logically, if we believe in the emergence of good from collective synthesis, the opposite of this is the over-concentration of power, which precludes collective wisdom. Corporations and governments naturally try to concentrate power for self-interest. Some concentration is needed for effective action, so the principle must be balancing concentrations of power. The US system was strongly based on the principle of a balance of powers. We should now ask if these balances are still healthy, and if the power of corporations is being properly balanced, since they have now grown more powerful than many governments.*

*I conclude that the informed action that is currently needed exists on the individual level, which includes our political representatives. It is to bust large corporations and monopolies back down to the level where the sea is bigger than the fish. To remove corporate dominance of government and politics (and media) and get this re-balanced (not eliminated, because corporations have a rightful role in representing their collective interests on a smaller scale). Then the system will again be able to adapt properly and once again serve the collective good.*

## The Freedom to Listen

by Gordon Rowland

### Introduction

Seven is special. I know from conversations with my dear friend Bela. To capture in prose how he influenced and inspired me is an impossibly large task.

But he said that we can make the impossible possible.  
So with a smile and a bow, and a clear sense that all aspects of my work and life changed through our relationship, I will take the challenge  
and honor him as I can.

Although, the lessons are beyond words. And the meanings are in between.

### Verse 1. A New Stage

What a remarkable stage.  
Cultural evolution has surpassed biological evolution. Changes happen faster than ever before, some for the good. In many ways we've made a mess of it and threaten our own world.

More and more of us to keep alive, while the very few take a larger share. Why do we think science and technology will solve all the problems our faith in them has caused? If we do not do something about it a new stage will start without

us.

### Verse 2. Conscious Evolution

We may not be in charge, but we can shape what happens. We are the first generations of humans to know something of how evolution works. This knowledge comes with the price of appreciating the consequences of our actions. We face a transition. What attractors will we find or make and hold to trigger our next stage?

It is not a question of the nature of the world, or ways of knowing, not even of our actions per se. It is a question of our human purpose,  
a question of what we choose to be.

### Chorus

*Look outside, look inside visions trapped in verbal lies  
open our eyes and ears in time now we know that we decide  
all around, all around the world  
all around, all around the world*

### Verse 3. Communication

How do we choose a future and find answers for the one and the many? Through relating with one another, through language, through our jargon and slang, through our ideas and words and signs and symbols. Communication is not just a primary marker, a sign of our level of consciousness.

It is the most powerful tool we have to initiate a new stage.  
Conscious evolution will happen through the ways we choose to relate to one another, through the languages we choose to use, through the shapes and meanings we give our ideas, through the words and metaphors and analogies we create and share.

How we choose to be and how we choose to relate are the same question.

The most important thing is to listen to ourselves,  
to listen to others, and to listen to our world.

### Verse 4. Dialogue

When we listen we find connection and wholeness and interdependence and respect and trust and wonder.  
When we listen we find responsibility to do good for ourselves, for others and for our world - the emergence of individual freedom  
AND social justice AND ecological harmony.  
When we listen we find we can trust each other's participation in the decisions that affect us all.

Dialogue is not discussion, a buzz word or ad campaign,  
a same-old elixir in a new bottle.

It is a way past our egos, our pride, the quickening of life, the replacement of  
meaning with information, the packaged presence and influence of media that  
conspire to keep us from listening.

It is a new vehicle, a way of being with one another, in the moment yet open to  
time and space outside, like jazz.

Dialogue grants us the freedom to listen.

#### *Chorus*

*Look outside, look inside visions trapped in verbal lies  
open our eyes and ears in time now we know that we decide  
all around, all around the world  
all around, all around the world*

#### **Bridge 1**

We learn, we think, and we feel. Our words are not our knowledge, and our ideas  
expressed are not our ideas. The language of understanding is imagery,  
is composite thought-AND-emotion attached to experience.

Imagery experienced is fields apart from imagery evoked, so we make sense in  
dialogue. We learn with each other, through relations, by being present.

#### **Verse 5. Technology**

Do we dialogue on-line when we pass memos across desktops, faceless and  
voiceless, chatting in monocultural text?

Is ours a digital destiny to be replaced or amplified with organized ones and zeros?  
Or do we dialogue and learn through mindbody presence  
in the charged air around a fire?

And does the machine show us what it is to be non-machine?

Our tools are not our solutions, and our metaphors are not us. New tools are new  
choices. New ways to tell our story, new ways to see ourselves and to  
bring us together or drive us apart.

#### **Verse 6. Artistry**

Who tells the story, who says what we are, and who decides what we will be?

The technologist does not turn savior making machines to serve machines.

The toolmaker makes tools without seeing all the things that they will be used to  
**do.**

It is the artist who uses the tool to create beauty, who intentionally reflects where  
we have been, where we are, and where we might go.

So we should turn to the artist among us, then the artist within us, then the artistry  
between.

Listening to the other, listening to ourselves, and listening to each other.  
Building on each of these freedoms.

#### *Chorus*

*Look outside, look inside visions trapped in verbal lies  
open our eyes and ears in time now we know that we decide  
all around, all around the world  
all around, all around the world*

#### **Bridge 2**

Powerful learning experience, dialogue, emotional states of heightened awareness,  
openness, careful listening, the ability to recognize and appreciate attractors  
and to give ideas a chance, the mindfulness of intense engagement.

This state is often liminal, arising from paradox, betwixt and between  
seeming opposites, the here and now AND a step outside time.

In it ideas come alive, emerge through connection,  
transcend what was previously known, charge the system with energy,  
attract other ideas in the space of surprise.

It is not competition, but honored gifts respectfully received.

It is listening, and it increases creative capacity.

#### *Verse 7. Sparks*

What does the artist provide besides  
help to escape our mind?

Attractors in the form of ideas  
and images and possibilities,  
maybe even the parti brought in  
from outside.

The artist in dialogue creates  
catalysts, triggers, and seeds  
and helps us connect.

The artist adds the spark of a new  
idea of how to create and achieve  
our dreams.

But the artist does not change  
our lives.

The spark is a smell, a taste,  
a feeling, a sound and a sight.  
It is up to us to decide and then  
to act in service of one another.

#### *Coda*

The world we create will be a better  
place because Bela stepped forward  
and spoke  
and because Bela stepped back  
and listened.

*Gordon Rowland has taught at the college level since 1982 (presently in the Roy H. Parks School of Communications at Ithaca College, Ithaca N.Y.) in areas as diverse as instructional technology, computer science and music theory, and has worked as a consultant and training developer for Fortune 100 companies. His studies focus on the nature of design process.*

*PATTERNS is developing a collaborative relationship between the original publication sponsored by the Association for Supervision and Curriculum Development (ASCD) as the newsletter for educators interested in learning more about systems thinking, and the American Society for Cybernetics, a professional society for practicing cyberneticians in a variety of fields.*

*We envision an exciting new year of expansion into a self-organizing field of journalism responding to the growing interest in the "new sciences" on the part of the general public and the exchange of information among traditionally isolated scientific disciplines.*

*Barbara Vogl, Warren Schultheis,  
[www.warrensultheis.com/patterns.html](http://www.warrensultheis.com/patterns.html)*

(continued in next column)

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# American Society for Cybernetics

## 2004 Membership Dues

Join or Renew by November 15<sup>th</sup>  
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**Great News!** We are now able to provide *Patterns*, a thirty dollar value, as part of your regular ASC dues without raising our rates! However, we do need your help. To save postage and time, we are including the 2004 renewal form in this issue of Patterns. Of course, you can still go on line and renew as well.

### How to renew (or join) the American Society of Cybernetics

1. Complete the membership form in this issue of Patterns and send before November 15, 2003 to insure that you continue to receive all 2004 issues of Patterns.
2. Enclose a check in US or equivalent Canadian dollars or charge to your credit card.
3. Return to:

Robert J. Martin, ASC Secretary  
Division of Education, Violette Hall  
Truman State University  
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Questions regarding dues may be sent to the above address or to [rmartin@truman.edu](mailto:rmartin@truman.edu).

### Why join or renew?

You will received the following benefits:

- Six 2004 issues Patterns, the ASC newsletter. (NOTE: Membership renewals received after November 15<sup>th</sup> are in danger of missing an issue.)
- Information by email of all ASC related events.
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- A significantly discounted subscription rate for the journal *Cybernetics and Human Knowing*
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- The opportunity to foster interactivity by listing yourself, your relevant Web resources, and / or your email address at the ASC Website
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Our members' interests and specialties span a range of diverse fields and disciplines, reflecting the interdisciplinary and integrative character of both theory and praxis in cybernetics.

A typical ASC member has active interests in (e.g.) first and second order cybernetics, general systems thinking, and the application of these ideas in the many fields where they offer insights and practical guidance.

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Please visit our website at: <http://www.asc-cybernetics.org>



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