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THE INTERNATIONAL SOCIETY FOR THE SYSTEMS SCIENCES

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SECTION ONE

EDITORIALS, PAPERS AND CORRESPONDENCE

INCOMING PRESIDENTIAL ADDRESS CONTINUING THE TRADITIONS OF ISSS: SYSTEMS SCIENCE IN THE SERVICE OF HUMANITY

Harold Nelson
International Society for the Systems Sciences
44th Annual Meeting
Toronto, Canada
July 2000

Introduction

The society, founded in 1954 by Ludwig von Bertalanffy, Kenneth Boulding, Ralph Gerard, and Anatol Rapoport as the Society for General Systems Research (SGSR), was created in reaction to the growing disparity between reductionist science and their own scientific understanding of the real world as based on relationships, interrelationships and emergent qualities. Their intention was to integrate different fields of study in the same way that the concept of consilience strives to unify all rational knowledge. Because of this, a role that has been unfairly attributed to ISSS and other systems organizations in the past is one of striving for control and totalization yet this is clearly not the intention of the Society. This misunderstanding however reveals a root concern for global consequences due to localized actions as well as issues of power and authority in contexts of diversity. This tension between global systems and locally autonomous systems will be one of the focuses of the ISSS conference in South Africa next year.

The Society is becoming more successful at demonstrating to colleagues in traditional disciplines and to the public at large that systems thinking provides an important and essential understanding of the world in all of its interrelated complexity. The evolving challenge now is to understand how to utilize the insights gained from systems scholarship in broader social realms. As a consequence, one of the enduring contemporary roles that ISSS has taken on is that of service and the one that I want to continue supporting during my tenure as President of ISSS. The role of service has been an explicit theme for several past presidents including C. West Churchman, Bela H. Banathy and our most recent president, Peter Corning. Progress in this area is essential for the continued success of the Society in the future.

Acknowledgments and Thanks

I would like to thank Peter Corning for the exceptional job he has done as President in putting together not only the 44th Annual Meeting of the ISSS but the World congress of the Systems Sciences here in Toronto as well. It has been an exceptional gathering of scientists and scholars from diverse systems organizations from around the world. I would also like to thank Helmut Burkhardt and his staff from Ryerson Polytechnic University for their hard work in pulling everything together here on campus in support of the conference attendees and activities. I want to thank Jennifer Wilby and Janet K. Allen for

their superb work in publishing the Proceedings of the World Congress and the ISSS 2000 together plus all their invaluable staff work prior to and during the conference.

2001 Conference Announcements

I would like to invite you to attend the 45th international conference to be held at the Asilomar Conference Center, Asilomar, California, July 8th through the 13th, 2001. This will be an opportunity to meet new colleagues from diverse and proud cultures who represent rich historical traditions. The conference will include activities at distributed sites in South Africa, China, Canada, the United Kingdom, Bulgaria, and Peru.

I invite you to consider submitting papers for this conference especially with a focus on the theme of service that I will discuss in greater detail later. The two questions I want to pose for the conference that emerge from the general theme of Systems Science in the Service of Humanity are:

1. How can the systemic relationship of service serve an emerging understanding of development that is both global and local?
2. How can systems scientists, scholars and practitioners serve on behalf of others?

But first I would like to discuss some focus issues that emerged for me during the past few days of the conference. I believe these focus issues ought to become part of an ongoing dialogue within ISSS and invite others to suggest ways for this to happen in a manner that assures action items will emerge in time to be presented at the next conference.

Focus Issues From Conference Sessions

1. Women and Other Under-Represented Populations in ISSS. One of the key issues that emerged during the Congress and ISSS Conference concerned not what was happening but what was not happening. It was clear that there were not enough women making presentations and in organizational positions of leadership. It is important to determine why this has occurred and how ISSS can facilitate more balanced programs in the future in terms of gender participation. There is also a need to develop ways to become more representative of the diversity of populations that exist around the world. This will be especially critical for ISSS as it plans for its next conference. It was also clear that there were not enough students participating actively in the conference. Students are not only important to the future of ISSS but are important to the health and energy of the Society today.
2. Intellectual Skunk Works. Another topic that came up during the Past President's Roundtable discussion, which I had the honor of chairing, was a valuable reminder of the role that ISSS has played historically in providing a context for scholars whose ideas were well ahead of their time. The discussion brought out examples of now-famous thinkers and their ideas that were 20 to 30 years ahead of their time when ISSS was the only professional society willing to give them a forum from which to be heard and published. I believe that it is important for ISSS to remain an intellectual skunk works for new ideas of excellence, especially as we struggle with the issue of defining and confining the field of systems to clearly delineated domains and concepts.

3. Unity in Diversity – i.e. SIG’s and the Society. A second issue that arose during the roundtable dealt with the perennial issue of unity in diversity as represented by the SIG’s. Although SIG stands for Special Integration Group, rather than Special Interest Group which is common in other professional organizations, there is an ongoing tension between the purpose of ISSS to find common ground among diverse thinkers and the need for individuals to find an intellectual home in domains of interest populated by colleagues with shared intellectual concerns. I believe it is important that this issue be looked at in greater depth in order to find a way to accommodate diversity in unity and unity in diversity.
4. Quality – Rigor and Relevance. A third issue which emerged during the roundtable discussion was about an ongoing concern in ISSS which is the quality of papers and presentations. Quality standards similar to other professional groups such as AAAS (American Association for the Advancement of Science) were suggested as benchmarks. There was a feeling among some Past Presidents that standards of scientific rigor in papers accepted for publishing and for presentation at conferences were not consistent. I believe that this is another issue that ISSS needs to look at in greater depth but not in isolation from the issue of relevance. The challenge for ISSS is to support ideas and individuals who bring both rigor and relevance into their work. Issues of relevance such as ethics and justice must be an equal measure of quality with scientific rigor.
5. Leadership – Systems Thinkers in Leadership Positions. One issue that stood out for me among many presentations was captured by the theme of Russell Ackoff’s paper, “doing the right things right.” This is the seminal challenge of the issue of leadership. For me the emergent issue is not one of how systems thinkers can influence leadership in organizations, governments and NGO’s (Non-Governmental Organizations) through their compelling systems logic. For me the issue is how systems thinkers become leaders themselves. How do they transition from advising to serving? I believe that the issue of service is key to facilitating systems thinkers as leaders. Good leadership is not hierarchical but rather depends on the development of relationships among those serving and those being served. These relationships are made explicit in the form of contracts that are best formed through a systems approach. I would like to now discuss in greater depth the issue of service since it is the theme I have chosen as President of ISSS for the 45th annual conference.

Service

1. Congruence of behavior with systems ideas. The challenge for systems thinkers is to act congruently with espoused systems ideas. If one wishes to be influential as a change agent it is important to remember that actions speak louder than words or in the words of an American poet:

“I can’t hear what your saying because your actions speak so loud!”

Ralph Waldo Emerson

Fundamental concepts like open systems behavior, lead to key questions of how ISSS can act so as to maintain open boundaries with the global socio-economic environment it is embedded in; how an open exchange is maintained with diverse groups of people who do not share the systems tradition of inquiry, but who can benefit from its insights. The idea of unity leads to the question of how reflection and action can be integrated through a systems approach rather than separated into different, distinct, and often competing domains of inquiry versus action. The systems concept of relationship also leads to fundamental questions about how systems scientists and practitioners relate

to others who are not members of the systems science community, but are the focus of the systems change agent's intention. Because, description and explanation alone do not prescribe action and prediction and control do not alone justify action, it is necessary for systems thinkers and practitioners to create systemic relationships with those who desire change in their lives, but do not like being changed. This relationship, in the form of service on behalf of the other, is one that needs to be explored as a means for systems thinkers as leaders to act systemically and responsibly with full accountability for the consequences of their work whether intended or unintended.

2. Reintegration of Sophia. Philosophy is a compound word formed from two Greek terms, philo – love for- and sophia – wisdom. Thus philosophy is the love of wisdom. In the pre-Socratic era of Greek history sophia or wisdom was defined as the knowing hand. Thinking and acting or making were not divided into separate domains. But, during the Socratic period and as a consequence through all later periods of Western thought up to today, those who thought about things were put at the top of the hierarchy of important types of people while those who made things fell to the bottom of this hierarchy. This split in sophia is reflected in many of the polarities of modern life where we still live with the consequences. We have clear polarities between workers and managers, between idealists and realists, between researchers and practitioners— and the list goes on. From a systems perspective there is no logical reason for this split. Reflection and action need to be an integrated whole if systems ideas are to be congruent with systems behavior.
3. Systemic Relationships of Systems Thinkers to the Rest of the World. Systems thinkers live and work in a world populated by people who see and experience the world in very different ways most of whom are not from a systems science tradition. Yet from a systems perspective we are all part of the interconnected social systems we inhabit. Systems thinkers, in the spirit of congruence with systems ideas, need to form relationships of interconnectedness with these others who are often the focus of systems change agents who claim agency without community. The relationship I want to focus on is that of service from a systems perspective. Forming a service relationship is forming a social system with all the interconnected and emergent qualities of any complex system. It is a 'conspiracy' i.e. a breathing together of divergent individuals who by their differences define the rich potential of the social system.
4. Service as a Systemic Relationship

“People like to change, they just don't like being changed”

Chilean Student

Being in service does not mean being a servant or subservient. It does not mean acting as an expert or a mere facilitator on behalf of someone else's needs. Service is not about helping people create what they already know they want or imposing predetermined idealized solutions onto unique particular situations. The success of service can be best determined when those being served experience the surprise of self recognition in what emerges out of their interaction with systems thinkers, who have attended to broader systemic concerns while serving particular autonomous interests.

Service that is not servitude treats the others as an equal. This does not mean the same as being similar, as in categories of social science, or equivalent, as in egalitarianism, but equal in terms of the right to have anyone's desiderata become the seed for purposeful change. Service is distinct from

helping, which by its nature creates a unilateral relationship. In this type of relationship all power and resources reside in a dominant role. Leaving the other in a position of being helpless and indebted:

Serving is different from helping. Helping is based on inequality; it is not a relationship between equals.... Service is a relationship between equals.... Helping incurs debt. When you help someone they owe you one. But serving, like healing is mutual. There is no debt.

Rachel Naomi Remen (1996)

Service is a relationship of mutuality and diversity allowing those with excellent skills and abilities to work on behalf of those who are pressing to express their humanity in ways which honor their uniqueness in a world of increasing globalization.

5. Conference Theme for 2001. The theme for the 45th annual conference therefore is this:

Systems Science in the Service of Humanity

With the concomitant questions of:

- 1) How can Service Serve Development?
- 2) How can Systems Thinkers Serve?

Thank you for coming today and I very much look forward to being your President for the coming year.

VIRTUAL HEALTH SYSTEMS

- process replaces products -

Len Duhl

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The current conversation discussing health is basically about managed care and the creation of new payment mechanisms which effect patient, provider, and all the suppliers to the systems. I believe that the development of the new health system is more profound than we realize.

The creation of managed care corporations follows the larger pattern of the development of virtual corporations. These corporations have made a major shift from the production, distribution and sale of products to a concern with controlling process. Simply put, if there is a control of the systems that deliver any product they have the power to control any of the producers of products, and meet the basic goal of the bottom-line, profit.

For example, the clothing manufacturing industry is set up, so that many so-called labeled products are never in the controlling corporations buildings. Their network chooses a designer, shops for the cheapest producer, ships by distributor, and when an order comes it is delivered by Federal Express or UPS from their warehouses direct to the consumer. Payment is transferred electronically without the corporation having a hands-on role.

Though, pioneered in the cloak and suit industry, the same pattern exists in producing airplanes and missiles, the electronic industry and especially in computers, Internet and software. Clearly, the organization like Netscape can lose money by giving millions of copies of its product free, gained control of web servers, as ever more secondary providers bought into the system. Microsoft when it controlled computers did so by cornering the PC market with IBM. When they realized that computers were to be replaced by networks and especially the Internet, they moved quickly to compete with Netscape attempting to control, as Netscape did by attempting to monopolize the processes.

The virtual health corporation does not need its own hospitals, equipment, providers or local management. It can rent, or buy all that is needed at the lowest price that maintains enough quality to keep people buying in, and profit flowing.

As each professional group fights for its turf, it blinds itself to the real issue. To them, those that compete for the product they provide are the enemy. Thus nurses fight for turf with medical technicians and extenders, physicians and others. Psychologists, psychiatrists, social workers, and family counselors fight for turf. Meanwhile the virtual corporation, ignores these issues and downsizes maximizing profit. WE see the battle clearly as the virtual corporations take on Kaiser, a full service provider. Here the sale of hospitals, the streamlining of services, buying other delivery systems and creating new activities in consultation and overseas hopes to bridge the gap to the virtual corporation. We see that programs that survive moves quickly from the product provider role - medical care - to focus on the contextual structure and process.

Menningers, watching other psychiatric hospitals go down the drain, shifted rapidly to entering the virtual game. They made contracts with all sorts of providers - public and private - entered new markets, cut down time of service, while maintaining quality.

The analysis of the new corporation requires both an economic and process-system evaluation. The change is profound, so that the very culture of health and medicine is changing rapidly. Culture reflects the total behavior and values of any group. By attempting to maintain its old medical culture, any group, whether physicians, nurses or patients, allow themselves to be overwhelmed by the new. This new culture can be seen as an enemy for it is forcing radical changes on all of us within the health systems. It may have to be seen as inevitable, with the caveat that critical values must exist within the virtual system.

Though turf power is evaporating, there is a need to maintain quality control, moral integrity, a concern with the patient-client, maintenance of healthy work conditions, and pay for workers. Though, we complain that service jobs bring low wages, two job families, and the secondary loss of the middle class, we must face the fact that we are in an era of service jobs. What can be done to make service jobs have enough integrity for workers and their families to live a healthy life?

The answers, in the old culture, are welfare services. The fact that we are abolishing welfare, is unconscionable, since there is no replacement. However, finding jobs, as a substitute may mean that we must move to a culture where everyone has a job. To do so, may be to redefine work, and give value to jobs that improve community well-being.

The community, therefore is the key player in dealing with virtual corporations. Rather than compete for industries by lowering their taxes, the communities - both their private and public sides - must work closely with the virtual corporations. If the community offers opportunities for sales of the process, within their boundaries, the virtual corporation must provide contextual services to maintain and upgrade the well-being of the people and other institutions. Thus recreation, housing, electronic and physical infrastructures, education and open spaces become important bottom-line criteria.

Healthy Communities and Cities programs are beginning attempts to deal with the new emerging paradigm. By encouraging all players to play at a common game-board, facilitating participation, facing value questions such as equity, they are in fact dealing with new governance patterns. The emerging role of local communities is the maintenance of quality control.

The virtual corporation will be with us for years to come, and so will the community. These are the new players in the emerging processes in the health and other fields.

PROBLEMS AND REMEDIES IN SYSTEMS SCIENCE

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Introduction

At the 44th Annual Meeting of the ISSS, 16-22 July 2000, Toronto, as part of a presentation, I put forward an outline : ‘Summary of problems and solution in current systems science’. This brief paper is a revised version of the same topic of perceived problems and their suggested remedies. The intention is to open a discussion in the context of current practices in systems science.

Current State of Systems Science

Early Developments

Although the origin of systems science may be said to lie in classical control theory which emerged around the end of the 2nd world war, as far as the present discussion is concerned it began in the 1950’s and 60’s with publications by von Bertalanffy and Boulding regarding general systems theory (GST). These authors and later others like Checkland noted the problems of ‘open system’, communication, cybernetics and the vast variety and diversity of activities of ‘complex systems’ in biology, society, economics, management and so on. Having noted how pervasive the activities of systems appeared to be, they suggested the development of a GST. Although they may have been aware of aspects of scientific method, they abandoned conventional science in its entirety as unsuitable for handling complexity.

Later Developments

The desire for development of a GST persists for example through the idea of search for isomorphisms in the operation of systems as suggested by Troncale. However, by and large perhaps because their view was obscured by the variety and diversity of activities of complex systems, early and later practitioners in systems science abandoned the search for a GST. Instead they embarked on a variety of developments:

1. Publishing papers/books dealing with ‘systems principles’ like definition of system, emergence, hierarchy, control, communication and others,
2. Evolving problem solving schemes like soft systems methodology, viable systems theory, notions of intervention and so on,
3. Devising a large number of diagrammatic representation of systems,
4. Developing somewhat obscure ideas bordering on mysticism ,
5. Separating the treatment of information systems from that of energetic systems,
6. Separating systems engineering and project management as disciplines,
7. Developing a number of philosophical ideas.

Causes of Variety of Developments

1. Perhaps the foremost cause of the current abundance of views, methods and ideas regarding systems is the rejection of scientific method as employed by conventional science, in its entirety which, with hindsight, was a mistake.
2. Confusion due to the number of definitions of the term ‘system’ based on the notion of ‘interrelated set of objects’.

3. Ambiguity of the term 'system' : a method of doing something like betting on a horse, thermodynamic system as a means of defining a region of space/boundary and many others as summarised by Klir.
4. Use of the term 'system' as a means of generating views i.e. confusion with the idea of model.
5. Many people seem to expect a kind of miraculous development arising out of the notion of 'systems'.

Consequences of Variety of Developments

Although the variety of views is stimulating and appealing, the failure so far to get at the fundamentals of the systems phenomenon seems to have led, in a number of instances, to superficial notions expressed in abstract terms. These terms, by and large, do not lead to tangible and observable concepts. This may have resulted in :

1. After about 50 years of existence of the 'systems movement' we are still discussing systems principles, modelling, hierarchy and so on, apparently without consensus,
2. Lack of impact of systems ideas on activities of society like education and lack of relations with established branches of knowledge like biology, engineering, economics etc.,
3. Reluctance to accept systems ideas by learned disciplines,
4. Uncertainties in applications in practical situations.

Change In The Current State of Systems Science

If the discussion so far can be taken to indicate a need for a change then we feel that such a change can be brought about by selecting aspects of scientific method which appear to facilitate development. These aspects may be formulated as:

- striving for search for those features of a phenomenon in a domain which may be considered fundamental and pervasive,
- expressing these features in a framework of an abstract symbolism which allows them to be related to tangible and/or directly observable characteristics or to those which can be subjected to 'thought experiments' (characteristics which can be visualised, estimated),
- using a symbolism which operates like an 'argument' i.e. having a beginning like premises and leading to conclusions about specifically stated concepts or acting like an 'inference engine'.

The complete entity of fundamental features plus symbolism constitutes an empirical theory.

In particular :

1. We shift concentration from 'systems' to physical and mental changes of state, the single unifying concept throughout the vast variety and diversity of the essentially unique systems phenomenon,
2. A change of state is expressed as a combination of qualitative and/or quantitative properties, a notion well recognised in physics and used extensively in natural language,
3. We define interactive and environmental objects forming a bounded whole referred to as a situation/ scenario which exists solely for changing consistent properties in a specified manner i.e. bringing about changes of state,
4. One purposive bounded whole can change only one property at a time since only two properties can be compared: that which is wanted with that which exists at any given moment and carried by feedback,
5. The use of natural language suitably processed to form an inference engine called linguistic modelling, is suggested. This can handle qualitative as well as quantitative properties attached to

objects, operates through a form of predicate logic and takes into account uncertainties associated with frailties and vagaries of living, especially human behaviour.

6. Unified treatment of situations with interactions of physical power carrying the appropriate energy and of influence with information.

Possibility of General Systems Theory

We recognise that the basis of a GST lies in dynamic situations. The reinstatement and application of the appropriate aspects of scientific method may help to evolve a GST. Such a theory should have the following features :

1. It can handle systems phenomenon in a range of spheres : natural, living, human activity, technical and their mixtures,
2. It deals with situations or scenarios in these spheres including those which are unrepeatable due to will, caprices and frailties of living/human objects,
3. It is capable of predicting outcomes of dynamic situations subject to restrictions arising out of lack of repeatability,
4. It operates with abstract/theoretical constructs which can be related to observable characteristics,
5. It is able to demonstrate the effects of fluctuating properties associated with living/human objects on outcomes of a situation,
6. It is able to incorporate various aspects of uncertainty,
7. It leads into product (artefact, energy and information) and systems design,
8. It should have roots in branches of existing knowledge, be teachable, useable and to lead to computable expressions,
9. It is based on natural language rather than mathematics which is restrictive but is able to carry the latter when the need for calculations arises,
10. It can reach or relate to a particular discipline or area of experience in its domain through the constituent objects in a situation/scenario which originate from such a discipline or area with particular features to fit into the general symbolism.

Conclusions

An approach is proposed which claims to have got at the fundamental features of the systems phenomenon coupled to a symbolism capable of dealing with situations with predominantly qualitative properties. Such an approach, if found acceptable, perhaps can remedy the problems listed under 'Consequences of variety of developments'. It can also supplement, stimulate and enlarge the variety of views in current circulation and can stand as a candidate for GST. It should facilitate critical debate.

Questions arise concerning:

- The future role of an empirical theory in the light of features associated with living/human objects,
- Whether purposive systems can be seen as the ultimate form of activity,
- What the next age is likely to be after the current information age.

THE CONCEPT OF EMERGENCE IN SYSTEMICS
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Introduction

Nowadays the concept of "emergence" (or of "emergent property") is widely used in all scientific disciplines and even in everyday language. This contribution aims to clarify some questions related to the definition of such a concept, as it is often used in different ways and with different meanings. We will then discuss some applications of this concept in Systemics, mainly as regards social systems. It can be said that only the right understanding of what is emergence will open us the possibility of dealing with complex problems the social systems pose to scientists, managers, and in general to all human beings.

What Is Emergence

The concept of "emergence" and the doctrine named "emergent evolutionism" were proposed for the first time by C.L.Morgan (1923). For a lot of time the topic of emergence was considered as relevant mainly within the context of biology. The attribute "emergent" was viewed as synonymous of "new", "unpredictable", to underline the fact that, within biological evolution, we often observe the appearance of some features in a discontinuous way, in the sense that they are not predictable on the basis of the previously existing ones.

Such a rough conception of emergence was behind the proposal, made by Von Bertalanffy (which was himself a biologist), of a General Systems Theory. The topic of emergence attracted the attention of physicists from the Eighties, essentially owing to the explosion of research on deterministic chaos. Namely chaotic deterministic behaviors appear as "new", with respect to simple computational rules generating them (which are designed to work in a traditional deterministic way), and as "unpredictable" by definition. As such, they appeared as good examples of emergent phenomena, in the sense previously illustrated.

The need for a more precise definition of emergence, however, arose only when many researchers working in chaos theory began to build Artificial Life models. Within this context it was coined the term "emergent computation", to denote the appearance of new, ever growing as regards their complexity, computational abilities resulting from the cooperative action of a number of individual elements interacting according to simple rules (cfr., for an example, Forrest, 1990).

An important conclusion resulting from the more recent debate about the concept of emergence is that this latter is bound in an indissoluble way to the existence of an observer. In other words, we must suppose the existence of someone which has built a model of a given system, shaping the model itself according

to his/her goals, and introducing in it suitable rules and symmetries so as to satisfy general principles in which he/she believes, and to give rise to some wanted behaviors. A model behavior, then, is said to be emergent if it doesn't belong to the category of the ones which were the goal of the design of model itself.

A further important contribution to this topic was given by Crutchfield (1994), which introduced a distinction between three kinds of definition of emergence:

1. intuitive definition, corresponding to the rough identification of "emergence" with "novelty", as illustrated at the beginning of this section;
2. pattern formation, in which a pattern is said to be "emergent" when it occurs as a non-trivial consequence of model structure adopted, but could, nevertheless, be forecast in advance on the basis of a sophisticated mathematical analysis of model itself; this is the case, e.g, of the so-called Dissipative Structures (Nicolis & Prigogine, 1977);
3. intrinsic emergence, in which not only the occurrence of a particular behaviour cannot be predicted in advance (even if it is compatible with model assumptions), but its appearance gives rise to a deep modification of system's structure, in such a way as to require the formulation of a new model of the system itself.

According to these definitions, only intrinsic emergence can be considered as a correct specification of what we mean when speaking of "systemic" properties, not reducible to the properties of single parts of a given system, but emerging only from their interactions.

Emergence In Systemics

The concept of "emergence" is of paramount importance within systemic approach. From the early days of General Systems Theory researchers were investigating how systemic, wholistic, properties could "emerge" from the interactions between the constituent parts of a given system. In the Seventies, owing mainly to the work of Prigogine and his school, emergence was identified with the so-called order-disorder transitions, leading to the appearance of ordered patterns within systems constrained by suitable boundary conditions. Such processes were qualified as "self-organization" ones, and, since then on, the words "emergence" and "self-organization" were considered as synonymous.

In the Eighties a number of people, led by the physicist P.W.Anderson, began to contest such an identification (see, e.g., Anderson and Stein, 1985). Were true the arguments put forward by Anderson and others, we should arrive at a paradoxical conclusion: the description of "emergent" phenomena is possible only within a theoretical framework making reference to the Quantum Field Theory (QFT). This latter is a generalization of Quantum Physics, whose construction began at the end of the Twenties, owing to scientists such as Dirac, Heisenberg, Fock, and later Schwinger, Feynman, Dyson and many others (a good reference on the history of QFT is Schweber, 1958).

QFT deals with systems characterized by an infinite number of degrees of freedom, such as physical fields defined on a space-time continuum. It appears as particularly suited to describe macroscopic phenomena emergent from the collective behaviour of interacting microscopic units. Between its main achievements we may quote the theory of superconductivity, of superfluidity, of laser effect. QFT is not widely known outside the world of physicists, as its understanding requires a very high mathematical expertise. Just for this reason the validity of the arguments of Anderson et al. is a so important topic. Were they right, all previously existing descriptions of emergent phenomena, including the ones introduced by Von Bertalanffy, Prigogine, Haken, and many others, should be ruled out. As we can see, a large part of theoretical body of systemic approach is put under discussion. Moreover, such a conclusion appears

as somewhat in contradiction with the fact that, in more recent times, other researchers, such as the ones working to build Artificial Life models, claim to have exhibited concrete examples of “emergence”, by resorting to algorithms which, at first sight, have nothing to do with quantum ones. The debate on this topic is still open, but, in any case, it evidences the need for a deeper study of the concept of emergence and, mainly, of the meaning attributed to it within physical science, both in a classical and a quantum framework.

Emergence In Social Systems

The concept of emergence, of course, is not of paramount importance only in physical systems but even, and more, in social systems whose components are biological beings. It is to be remarked that the study of emergent phenomena in social systems must take into account what is known about these phenomena in physical systems. Going in further details, we can say that two processes of emergence in social systems may be considered:

- 1) The ones based on the concept of Collective Behavior [Theraulaz 1992; Millonas 1993] and related to emergence of new systems such as flocks, herds, and swarms from the interactions among single living systems such as birds, horses, and bees. The emergent new “being” has not the same properties of the interacting components: in the previous examples it may be assumed to be not a living system even if it is able to learn, to die and to born. It may be more appropriate to consider the resulting emergent entity as a being rather than a system, focussing the attention on its integrity rather than on its analytical structure: components do all the same things rather than being characterized by different organizational roles, such as happens in the Living Systems Analysis (LSA) based on [Miller 1978]. In this case it may be more appropriate to speak of emergence of Collective Beings (CB) rather than of Systems.

The same processes can occur when we deal with a classroom or a traffic bottleneck where the single components have not different and specific roles but from their interaction the behavior of a new Collective Being emerges. As we said before the role of the observer, who must have a model, when recognizing a flock or an herd or a swarm, is crucial. The observer is active part of the phenomena, is generator of existence.

- 2) The emergence of social systems from a social set of interacting components. In this case the components interact using ethics as a set of social rules able to induce the emergence of a social systems. The power of an ethics may be figured out as its ability to make emergent a social system and is related to how is large, vast, lasting, non exclusive, and open. It is important to distinguish among:
 - morality, a value system inspiring human behavior;
 - ethics, introduced in philosophy by Aristotle, referring to the part of philosophy which studies human behavior induced by the application of principles and values (to be intended separately from morality as introduced by Hegel);
 - Code of Ethics [Brooks 1989], an official company statement delineating the values on which the company culture is based and its liabilities towards employees, clients and society.

We may use the following theoretic device to identify ethics as a process, as a loop:

- 1) Ethics as the minimum requirement for a basic set of micro-local (social)-rules able to activate the transformation of a social set into a social system (inducing emergence of CB from them).
- 2) Social system (as emergent property of a social set adopting a core ethics based on the original set

of micro-(social)-rules activating a process, a loop continuously increasing and specifying the original rules, inducing, adopting, and amplifying values.

Rules for the autonomous agents of the social system are understood to be both:

- micro: operating for each agents, at microscopic level instead at macroscopic level, as it is for the brownian motion.
- Local: operating not as general rule but processed, interpreted by the single autonomous agents.

We can conclude by saying that a right understanding of a social system is possible only if we understand in which sense it is emergent from the set of micro-local-(social)-rules holding within it. The research must than be focussed on how the global features of the social systems depends on such rules. Once again, such an understanding is possible only if we have a model of the system under study and, in turn, such a model presupposes the existence of an observer interacting with the social system itself. This implies that only by adopting a truly systemic point of view, in which the role of the observer is taken into account, we can deal with complex problems posed by social systems.

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INFORMATION MODEL OF THE EARTH'S EVOLUTION

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Introduction

Revealing general systemic regularities of evolution and development, expressed in information form that are independent on specific material substances, represents a very actual scientific problem. For the problem solution we use Informational Macro Dynamics IMD [1-3] as a mathematical theory of revealing and modeling the information regularities. IMD integrates the uncertainty of random interactions into the ordered cooperative structures. The sequence: Interaction, Integration, Cooperation, and Dynamics of Ordering, accompanied by increase of Complexity, reflects forming the IMD information model. Irreversible macrodynamics originate a space movement directed toward a state consolidation by memorizing the renovated hierarchical macrostructures .

The IMD model is based on the variation minimax principle for information functional. This functional integrates and averages multiple interactions at microlevel by an analogy with Feynman's path functional. Principle of minimum uncertainty defines the driving forces toward the cooperation. The equations, describing some regularities, select the minimal uncertainty options among all others, considered as the maximal uncertainty options. Therefore, each of such equations satisfies the minimax principle of uncertainty. All such equations assume to have a general invariant as a consequence of solution of the minimax variation problem.

The IMD model has 6-levels of hierarchy: statistical microlevel; quantum dynamic level; classical dynamic macrolevel of macrotrajectories; hierarchical informational dynamic network of cooperative macrostructures (IN); a possibility of creation of the second stochastic level as a result of Chaotic Dynamics; and the optimal code accumulated the IN hierarchy, dynamics, and geometry.

IMD minimizes a gap between observation and modeling by applying the simultaneous solutions of the identification and structurization problems under optimal control actions.

The IMD approach also brings a constructive measuring of current information, which evaluates both observation and modeling and leads to a direct computer implementation.

Evolution Process of The Earth's Global Developing Macrosystem

Evolution process on Earth involves human activities, exploring Earth's resources and Sun's energy. According to E.Chaisson [4], these activities slow down the entropy increases $S_o(t)$, predicted by the second law. The question is: what should be the actual tendency of evolution of the entropy $S(t)$, satisfying thermodynamic equations?

According to equation of irreversible thermodynamics, the considered total entropy S consists of two parts: the internal entropy S_i , generated in Earth, and external entropy S_e , delivered by human activities S_e^T and from Sun S_e^S : $S_i = S_e^T + S_e^S$. Assuming that S_e^S is unchanging, let us evaluate the trend of S_e^S . Generally, $S_i(t)$ must grow, but $S_e(t)$ can decrease. The entropy production also consists of two parts: $dS/dt = dS_i/dt + dS_e/dt$, where $dS_i/dt > 0$, and $dS_e/dt \leq 0$, or $dS_e/dt \geq 0$. Actually the difference

$$\Delta S = S_o(t) - S(t) = \int_{t_o}^t (dS_i/dt - dS_e/dt) dt \quad (1)$$

can be created by the distinction of relative entropy's speeds dS_i/dt and, dS_e/dt reached by a current time t . The condition of local stability of the Earth evolution requires to keep a total entropy $S(t)$ constant within some time intervals $\{t_i\}$:

$$S(t_i) = C_i, S(t) = \sum_{i=1}^k C_i(t_i), t_{k-1} < t \leq t_k, \Delta S = S_o(t) - \sum_{i=1}^k C_i(t_i), \quad (2)$$

that is possible if

$$dS_i(t_i)/dt + dS_e(t)/dt = 0, S_e(t) = C_i - S_i(t) \quad (3).$$

The total entropy plays a roll of Liapunov's function for stability analysis [3]. This means, $S(t)$ can grow only by a jump piece-wise trend, being locally constant during the discrete intervals $\{t_i\}$, while the internal entropy $S_i(t)$ can grow continuously. The jumps can be created by technology "booms", connected with new inventions.

The evolution is accompanied by concentration energy and entropy in lesser volumes, which increases the energy and entropy density, and according to [3], leads to increase of complexity. $S(t)$ can grow if both dS_i/dt and dS_e/dt continue to increase. The increase of the entropy production $dS_i/dt > 0$ leads to decrease of the discrete time intervals (DP) $\{t_i\}$, according to equation [3]: $\max dS_i(t_i)/dt \rightarrow \min t_i$. The difference ΔS may grow even each of $S_o(t)$ and $S(t)$ grows. The above equations describe the character of curves $S(t)$, $S_a(t)$, $S_i(t)$, $S_e(t)$, $S_{ea}(t)$, where index a indicates the average value.

The structure of the IMD control system (Figure 1) is defined by the model's informational flows. The initial microlevel's entropy flow is delivered by fluctuations $f(t)$: S_f , the transformations from micro-

to macrolevel $[\tilde{x}(t) : x(t)]$ create an internal entropy S_i , an external program $g(t)$ can deliver the negentropy (or entropy as well) $\pm N_g$, the external control $u(t)$ delivers the negentropy N_u affecting macrolevel through microlevel, the instabilities $\Theta(t)$ at both micro- and macrolevels are able to generate the negentropy N_Θ .

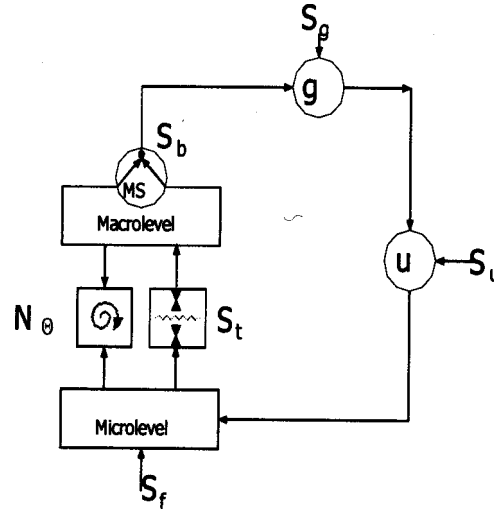


Figure 1. The Structure of the IMD Control System

The equation of information balance is: $S_f + S_i \pm N_g + N_u + N_\Theta = \Delta S$. The output macrostates carry this entropy, if they are not bound by the IN. The bound macrostates can carry the negentropy $\Delta S_o = \Delta S - S_b$ where $S_b = a(\gamma)n$ measures the entropy of the macrostate binding, which could be delivered by the negentropy of control. External entropy $\Delta S_e = S_f + N_u + N_u$ is delivered to microlevel, and then via the entropy of transformation $S_t(\Delta S_e)$ reaches the macrolevel, where the entropies S_b and $S_b - N_\Theta$ can be generated. Internal entropy $\Delta S_i = S_i + S_b - N_\Theta$ and the balance condition $\Delta S_e = \Delta S - \Delta S_i$ keep the total entropy fixed and constant $\Delta S(t') = C(t')$ at each discrete interval $DP(t')$.

Maximizing of the microlevel's entropy minimizes the macrolevel's entropy at DPs t_i :

$$\max \Delta S_e = \min \Delta S_i, \text{ or } \Delta \dot{S}_e = -\Delta \dot{S}_i = \max H(t') \quad (4).$$

The external functions $f(t)$, $u(t)$, $g(t)$ can affect the system only at DPs t_i when the IMD model becomes open for the microlevel's interactions. That applies to random behavior of different microlevel's entities, such as individuals, their cooperations, and the interaction of distinct groups of subsystems. The macromodel's differential operator that depends on these microvariables at the DPs, is changing at the DPs, reflecting the influence of the individual random behavior on macrodynamics.

These changes affect the IN's chaotic attractors, leading even to the possibility of their destruction and/or instability. Such a situation can interrupt the sequence of the IN's node, transforming the macrotrajectories into stochastics, or into the random trajectories of the considered individuals. The IMD information model requires to spend an energy for the model's implementation, which evaluate the work

of capturing the information for structurization. But the model's structural information and the energy, concentrating in the structure, are not equivalent each other. Even if a corresponding energy has been spent on each cooperation, their sequence and a total number, reflected by the information structure, are different for each specific subsystem and/or system.

Therefore, the total cost of the energy could be the same for different information structures, depending on specific path across the structure to reach a particular cooperative macrostate, which characterizes the subsystem and/or the system, while the quantity of the accumulated information would be a distinct. The information encodes an energy, but the different codes may encode the same energy. The IN's structure enhances a history of cooperations and complexities.

The second thermodynamic law works as a source of ordering and structurization, which generates the macromodel's inner controls that create the novelty, asymmetry, order, cooperation, and complexity [3].

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ON CREATING A GREAT UNIVERSITY

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Suppose one wanted to create a great university. How would one do it? I chose this as a topic for some remarks that I made in May, 1995, to a group of about 80 young Russian professors who had just spent a year at universities in the U.S. They were the first group of participants in the Junior Faculty Development Program, which is sponsored by the U.S. Department of State under the Freedom Support Act. The purpose of the Program is to expose young Russian academics to university life in the U.S. — teaching methods, administration, and the literature in their fields. The purpose of the meeting in May was to give the visiting professors a chance to meet each other and to think about and share their experiences in the U.S. The Americans hoped that when the visiting professors returned to Russia they would revise their course materials and share them with colleagues on their campuses and colleagues at other Russian universities that they met through the JFDP program.

In my talk at this conference at the end of their year in the U.S., I was asked to address two topics — autonomy and democracy in higher education. The assumption was that people at universities in Russia had many more opportunities for creating autonomous, democratic universities in 1995 than in previous years. So, the question was, how can Russian professors take advantage of their new opportunities to improve their universities? Based on my experiences at U.S. universities, I made two suggestions which I thought would improve autonomy and two suggestions which I thought would improve democracy.

Autonomy

1. Know who your competitors are and learn from them. I studied engineering at the University of Illinois. As editor of the student engineering magazine for two years, I became quite familiar with the College of Engineering. The College wanted to be the best College of Engineering in the country. In this College it was very easy to initiate change. All one had to do was to say, “MIT has such a program,” or “Stanford already does this.” From then on the burden of proof lay with those who were opposed to the innovation rather than with those who were in favor. This is the idea of “benchmarking,” which is well-known in quality improvement circles. If the people in an organization decide that they want to emulate or surpass another organization, much can be learned by studying what the other organization does. Of course, no two organizations are exactly alike. The local context must be considered.
2. Have a strategic plan. To do this, define your comparative advantage. The University of Illinois wanted to be an outstanding research university. The problem they faced was how to distinguish themselves from other large state universities, and, specifically, how to attract bright, young researchers. They thought their physical location was a handicap — corn fields for hundreds of miles in all directions — particularly when compared with California, Colorado, Massachusetts, and Florida. They decided that they would have the most advanced computers in the world. They reasoned that some of the most advanced research in many fields requires the most advanced computers. By being a leader in computer technology they had a chance to attract some of the leading researchers in many fields. They also provided a very supportive administrative climate for doing research — minimum bureaucratic hassles. Professors were expected to write proposals and do research, not to learn in detail the procedures for how to pay people or buy equipment.

This strategy has worked very well for several decades. The Illiac I, II, III, and IV computers were state-of-the-art research computers. There were also more specialized computer-oriented laboratories on campus, for example, the Computer-based Education Research Laboratory and the Biological Computer Laboratory. Mosaic, the forerunner of Netscape, was invented by a graduate student at the University of Illinois.

Democracy

1. Manage intellectual competition creatively. Academics tend to be critical of one another. The task is to make this criticism constructive rather than destructive. In the Institute of Communications Research at the University of Illinois, this feat was accomplished as follows. The faculty in the Institute, led by then-director James W. Carey, claimed that there were basically three approaches to the study of communication: a) A behavioral approach — survey research, analysis of data, hypothesis testing, etc.; b) A cultural approach — the oral tradition vs. the written tradition, time-binding cultures vs. space-binding cultures, etc.; c) A cybernetic approach — formulate principles concerning communication, whether it occurs in machines, human beings, or social groups. By claiming there were three approaches, no one group ever had an “ideological” majority. (In terms of numbers, the behaviorists outnumbered the other two groups.)

Graduate students would associate themselves with one of the three approaches and would argue among themselves the pros and cons of the three approaches. In this way they learned the strengths and weaknesses of their position and of the other positions. Because all three positions were considered valuable, no one feared that he or she would be driven out of the department for unorthodox views. Indeed, the advocates of the minority positions were valued because they brought different perspectives to any issue.

2. Create a group that will introduce continuous quality improvement methods throughout the university. This is an idea which is now gaining ground in American educational institutions, following its success in corporations, government agencies, and health care institutions. Key ideas are to think in terms of processes rather than tasks, to define process improvement teams, and to empower the people on the teams to make improvements in the processes in which they work. Decisions are made not on the basis of internal politics, but rather by obtaining data from the “customers” of a process. “Data-driven decision-making” creates an environment in which people are confident that suggestions will receive a fair hearing based on their merits. Suggestions are considered by the team working in the process, and the person making the suggestion receives a reply, following careful consideration.

Conclusion

Finally, the way to create a great research university is to continually praise the leading researchers. At the University of Illinois every time an administrator made a speech, he or she would praise the University’s long record of research contributions — computers, radar, particle accelerators, earthquake-resistant buildings, semi-conductor lasers, etc. These speeches had several effects: They made the leading researchers feel important. They told young faculty members whom to emulate. They told students what faculty members to study with. They told alumni that their University was making important contributions to society. And they told politicians and the public that the quality of life is improved by supporting research. Hence, every speech by an administrator restated the vision and mission of the university and illustrated how it was being realized.

**Homage to
Karl Ludwig von Bertalanffy**

**the father of General Systems Theory,
born 19th September 1901, in Atzgersdorf (Austria):
a small town outside Vienna which is today inside its 23rd District.**

"...one of those strategically placed thinkers whose knowledge in many fields permits them . . .
to penetrate to the quick of the living reality." [Aldous Huxley].

von Bertalanffy advocated that we dare to broaden our loyalty from nation to globe and urged that we become patriots of the planet, endeavoring to think and act primarily as members of humanity, (and) begin pledging our allegiance to humanity and to the earth on which we stand, one planet indivisible or not planet at all. "We must begin protecting the individual and cultural identity of others". He advocated as well a new global morality: "an ethos which does not center on individual good and individual value alone, but on the adaptation of mankind, as a global system, to its new environment". "We are dealing with emergent realities; no longer with isolated groups of men, but with a systematically interdependent global community. It is this level of [reality] which we must keep before our eyes if we are able to inspire large-scale action designed to assure our collective and hence our individual survival." He argued: "Possibly the model of the world as a great organization can help to reinforce the sense of reverence for the living which we have almost lost in the last sanguinary decades of human history".
[Uncommon Sense. The Life & Thought of Bertalanffy. Mark Davidson]

Last 19th September 2000 there was a Preliminary Meeting (sponsored by Institut für Gestaltungs- und Wirkungsforschung - Technische Universität Wien) in order to examine how to organize from 19 September 2000 to 19 September 2001. (It is the Bertalanffy Year for some members of the Systems Community): the 100th Anniversary of his Birthday).

In this Meeting the participants agreed not simply to celebrate his birthday but to examine the peerless significance of Systems Thinking that became evident when Bertalanffy discovered that the arrangement of facts and events into systems could, in certain circumstances, be a very powerful organizing medium. His thought has certainly generated - along the last 46 years - a Systems Movement through the motivation of a Systems Community that could emerge and grow, though diversely, since he presented his General Systems Theory.

Systems Thinking is indeed a unique tool that helps to effectively solve the very serious complex and perilous problems that have been obstructing the development of most people's potentiality, thus the progress of humankind and the development of our species. However, it is a tool than can neither be taken for granted nor used as if it were a magic panacea.

This celebration comprises four main activities, whose features will be revised and reshaped, during their preparation and even manifestation, by an Organizing Committee that aims at improving their purpose and functionality:

1. The systematic improvement of the appraisal of Bertalanffy's contributions through the critical and constructive examination of essential information that has been integrated in the WEB SITE:
<http://www.bertalanffy.org>

2. A CONVERSAZIONE via web based on exchange of views, among e-mail subscribers, about original Bertalanffian texts, the evolvement of Systems Thinking until today and the convenience of using better the systems approach. This conversazione, which started September 2000 with some critical points of view, discussion and eventually agreements, intends to allow every participant to administrate her/his own personal profile, to browse through a hierarchical view of all postings, to perform a text search... and many more. It is under:

<http://www.bertalanffy.org/discus>

This Conversazione intends to be a Preliminary Forum, a virtual one, for encouraging everybody to express his/her views about the proper ways of making more useful, for the systems community the recognition of Bertalanffian achievements, suggestions and warnings; and also to examine how to push ahead the evolvement of Systems Thinking in order to make it Globally Minded.

3. The climax of this celebration is a CONFERENCE (it will be held November 1 - 4 2001, in Vienna) that has been planned until today (November 2000) as a FORUM for presentation of papers, lectures, speeches, posters and also an Open Space for self-organized debates and discussions, that would aim, in some areas, at finding out ways to reach:

UNITY <— through —> DIVERSITY

It has been tentatively structured as an International Conference on:

Systems Thinking Globally Concerned [a]
by means of General Systems Weltanschauung [b]
plus
the Homage to Karl Ludwig von Bertalanffy [c]
100th anniversary of his Birthday

[a1] To conceive and develop the features of Systems Thinking as it is required urgently at present, knowing that it has become indispensable to organize and improve the physical, biological, psychological, societal, cultural,... systems that human societies need for increasing the feasibility of actions that are necessary for reaching a Sustainable Development of Humankind ecologically, ethically and ethologically motivated (#), bearing in mind that there are three overall criteria of redesign related to: 1) man-man relations (socially compatible or ethical); 2) man-nature relations. (environmentally sound or ecological); 3) man-technology (civilizationally compatible).

[(#) a Sustainable Development of Humankind ecologically, ethically and ethologically motivated is a tentative term that aims at expressing the convenience, usefulness and necessity for humans, of finding out consistent ways of maintaining some aspects and even trends of the prevailing civilization learning explicitly to respect and improve the survival rights of Gaia, of all human beings and all the other living species respectively).

[a2] To identify better Tools, suitable Findings and useful Applications for learning to cope with the complexity that has been and still is emerging from recent global troubles, consequently challenges.

(*) Tools (methodology and epistemology): the role of the observer: the cartesian cut; endo- and exo-view; the ways of thinking: reductionism, holism, dualism and emergentism revisited; the systems science(s) - philosophy - „weltanschauung“; transdisciplinarity.

(*) Findings (theoretical aspects): „general system“ and „general evolution“; hierarchical systems and system dynamics; self-organization in physical systems, biotic systems, human (social, eco-, technological and psychic) systems.

(*) Applications (practice): criteria for social-systems, eco-systems, re-design of technological-systems re-design, modelling and simulation.

[b] To explore consistently and congruously Why, what for & how may and eventually should researchers, scholars, experts and everybody think and act in terms of General Systems WELTANSCHAUUNG, instead of continue being under the influence of simplistic generalizations.

[c] To examine critically and constructively the heritage of Bertalanffy related to:

(*) Organismic Biology, Organismic Systems Psychology, General Systems insights in Social Sciences, Perspectivism (Systems Epistemology), General Systems Theory,...

(*) the meaning of: law, emergence, grow, self-regulation, self-organizing forces, open system, negentropy, steady state, equifinality,... in biological, psychological, societal, economic, political and cultural systems,...

(*) the prevailing circumstances that every day are making more necessary to continue fighting against reductionist approaches and mechanistic interpretations, against robotomorphism and zoomorphism, against scientism and behaviorism, against absolutism and dogmatism in economic, social and cultural domains

4. A participatory RESEARCH WORK about holistic perspectives that offer some of the essential concepts that Bertalanffy and other enlightened researchers were able to discover along the evolvement of the civilizing adventure since few millennia ago. Perspectives that confirm today their indispensability in the unavoidable search of a humanistic way forward for humankind, which today appears as being compulsively absorbed by the dynamics of (1) superb technological achievements for a generalized automation of industrial production and exploitation of natural resources, and (2) post-modern economic policies based on globalization of free markets and clever financial speculations,.. as panacea for all possible Homosphere's ills. More holistic perspectives are urgently needed for coping with the increasing number of larger problems which are contradictorily engendered by civilizing processes whose incoherences are simply ignored as they are side-effects.

It has been suggested that during this homage to Bertalanffy's thought it would be useful to carry out research work about the need to grasp properly the humanitarian concern of some concepts that are certainly essential for the scientific development of Systems Thinking. The following possible aims as the outcome of intended proposals have been already suggested as necessary endeavours needed for learning, through Systems Research, how to create the necessary circumstances for a Humanitarian Globalization ecologically, ethically and ethologically motivated:

1. Open System. The idea of wholes as open systems germinated in the brain of Ludwig von Bertalanffy who grasped the causes of complex situations in biological organisms.
2. Conflict solution by means of Co-operation.
3. Sustainable Development as an ethical, ecological and ethological commitment of humans increasingly aware of their role on this unique Earth.
4. Spontaneity as main generator of the complicated, but indispensable complexity.

SECTION TWO

MEETINGS, CONFERENCES AND ANNOUNCEMENTS

**CALL FOR PAPERS
THE 45TH ANNUAL MEETING
INTERNATIONAL SOCIETY FOR THE SYSTEMS SCIENCES**

**ASILOMAR CONFERENCE CENTER
ASILOMAR, PACIFIC GROVE (Monterey), CALIFORNIA
JULY 8-13, 2001**

Conference Theme: Systems Science in the Service of Humanity

One of the key objectives of the ISSS as stated in its bylaws is to “...promote efforts toward the service of humanity.” This objective has been actively promoted by past presidents of ISSS and continues as the guiding theme for the 45th annual meeting at the Asilomar Conference Center in Monterey, California.

The challenge for systems thinkers is to act congruently with espoused systems ideas. Fundamental concepts like open systems behavior, lead to key questions of how ISSS can act so as to maintain open boundaries with the global socio-economic environment it is embedded in and how an open exchange is maintained with the diverse groups of people who do not share the systems tradition of inquiry but who can benefit from its insights. The idea of unity leads to the question of how reflection and action can be integrated through a systems approach rather than separated into different distinct, often competing domains of inquiry versus action. The systems concept of relationship also leads to fundamental questions of how systems scientists and practitioners relate to others who are not members of the systems science community but are the focus of the systems change agent’s intention. Because description and explanation alone do not prescribe action and prediction and control do not alone justify action it is necessary for systems thinkers and practitioners to create systemic relationships with those who desire change in their lives but do not like having change forced on them. This relationship, in the form of service on behalf of the other, needs to be explored as a means for systems thinkers to act systemically and responsibly with full accountability for the consequences of their work whether intended or unintended.

Being in service does not mean being a servant or subservient. It does not mean acting as an expert or a mere facilitator on behalf of someone else’s needs. Service is not about helping people create what they already know they want or imposing predetermined idealized solutions onto unique particular situations. The success of service can be best determined when those being served experience the surprise of self recognition in what emerges out of their interaction with systems thinkers, who have attended to broader systemic concerns while serving particular autonomous interests.

Service that is not servitude treats others as equal. This does not mean the same as being similar, as in categories of social science, or equivalent, as in egalitarianism, but equal in terms of the right to have

anyone's desiderata become the seed for purposeful change. Service is distinct from helping, which by its nature creates a unilateral relationship where all power and resources reside in a dominant role leaving the other in a position of being helpless and indebted. Service is a relationship of mutuality and diversity allowing those with excellent skills and abilities to work on behalf of those who are pressing to express their humanity in ways which honor their uniqueness in a world of increasing globalization.

Papers are particularly invited which focus on this theme of service or that bridge between this theme and other areas of systems scholarship and practice. Papers are also invited that focus on the conference sub-themes as described below.

Program Committee Chair, Dr. Harold G. Nelson; nelsongroup@worldnet.att.net

Organizing Committee Chair, Dr. Bela A. Banathy; babanathy@worldnet.att.net

Deadlines

Deadline for abstracts is January 15th, 2001. Acceptance Notices will be sent by February 16th, 2001. All abstracts are to be sent to: Dr. Harold G. Nelson at nelsongroup@worldnet.att.net If email is not possible they may be sent to: Dr. Harold G. Nelson, 2442 N. W. Market Street, # 112, Seattle. WA 98107 USA Telephone/Fax 1-206-282-5994.

Submission(s) must be in both hard copy (printed) and a 3.5" floppy diskette in a commonly used word processing program like Microsoft Word. A copy of the final abstract(s) with payment and registration for the Asilomar site are to be sent to:

Dr. Bela A. Banathy 38 Seca Place Salinas, CA 93908 USA.

Dr. Banathy may be contacted at Babanathy@worldnet.att.net

Phone: 1-831-375-7614

The Registration Form and full payment must accompany submission(s).

Deadline for final papers is April 2nd, 2001 Individuals are limited to two papers. Submission(s) must be in both hard copy (printed) and 3.5" floppy diskette in a commonly used word process program like Microsoft Word. All final papers are to be sent to:

Ms. Jennifer Wilby, 59 Browning Road, Pocklington, York, YO42 2GN, UK.

Ms. Wilby may be contacted at jmwilby@dial.pipex.com +44 1759 302718

Formatting Guidelines for Abstracts

The abstract should give an overview of your main theses, methods by which you plan to support your ideas and, if appropriate, a description of the case studies you plan to present.

Abstracts can be a full page in length, figures may be included, but do not go over the one page limit. Use the paper style guidelines for abstract style. Abstracts do not need to be submitted on disc. The preferred procedure is to send an e-mail copy to Harold Nelson for presentations at the main Asilomar site. For presentations at distributed sites abstracts must be submitted to the chair of the distributed site. State clearly which SIG it is to be considered for inclusion. **Please do not submit the same abstract for consideration to more than one SIG chair.** Faxed abstracts will be accepted only under special circumstances. The abstracts will be reviewed and the acceptance of papers will be based on the reviews.

Submission of Papers

Papers are to be submitted in the specified computer format on disc. Please follow the paper style guidelines as presented at the end of this call for papers. **Individuals are limited to two papers.** Papers presented at distributed sites will be included in published proceedings from the main site at Asilomar on one CD ROM therefore all papers submitted to distributed sites must follow the same time schedule for submitting abstracts and final papers utilizing the same style guidelines as those submitted to Asilomar.

If your paper is intended for a specific SIG, please submit it both to Jennifer Wilby and the appropriate SIG chair. **Do not send your paper to more than one SIG.** Jennifer Wilby must receive both hard and disc copies of your paper by April 2nd, 2001. The SIG chair may only require a hard copy.

Paper Editing

After submission, papers may be edited. Jennifer Wilby and Janet Allen will be the general editors, but they will co-opt experts in different areas for assistance. We will attempt to forward your paper to you after editing for your approval, but that may not always be possible.

The Vickers Award

A plaque and check for \$500 will be awarded for the best student paper. Although the advisor may be a co-author on the paper, it is understood that this award is meant to recognize student accomplishment and the paper should reflect principally the work of the student. Please indicate at the time of paper submission if your paper is to be considered for the Vicker's award and certify that this work was performed while you were a student. (You may have since received your degree.)

Distributed Sites

Distributed sites for the annual conference are being planned for in the United Kingdom, Bulgaria, China, Peru, Canada and South Africa. Depending on available technology, plenary sessions may be video streamed among all sites. Other means of sharing sessions will be utilized as needed. Papers presented at distributed sites will be included in published proceedings. Papers presented at distributed sites must follow same guidelines for submittal as those for presenters at host site in Monterey, California.

Distributed Sites Organizing Committees:

Great Britain Andres Mejia, Chair j.a.mejia@mgt.hull.ac.uk
Peru Ricardo Rodriguez-Ulloa, Chair rirodri@amauta.rcp.net.pe
Bulgaria Magdalena Kalaidjieva, Chair Kalaidji@mbox.cit.bg
Canada H. Ken Burkhardt, Chair Burkhard@acs.Ryerson.ca
China Chair, TBA
South Africa Chair, TBA

Ongoing ISSS Sub-themes in Systems Science

As always, we are interested in any papers dealing with general systems topics as well including focus on the economy, business and industry, information systems design and information technology, medical and health systems, psychology and psychiatry, systems design in education, system studies of climate change, systems approaches to intelligence, and applied systems and development; and systems approaches of duality theory, futurism and systems change, thermodynamics and systems theory, spirituality and systems, critical systems theory and practice, evolutionary learning community, hierarchy theory, systems philosophy and systems ethics, systems modeling and simulation, meta-modeling and systems epistemology, research towards general theories of systems, living systems analysis, processes and human processes, human systems inquiry, and evolution and complexity. See the call for papers from individual SIG (Special Integration Group) chairs below.

What is Life/Living? John J. Kineman jjk@nexial.org

The phenomenon of life itself, aside from its particular forms, has so-far defied scientific explanation. On the one hand we may imagine the accumulation of physical actions as somehow resulting in phenomena we associate with life—the view that life “emerges” from physical reality. In this view, one might suppose that a sufficiently accurate simulation of a living organism, essentially is living. On the other hand, we may argue that not all of the characteristics of life, many of which we may only know from direct experience, can be produced from physical processes alone—that “something else” must be involved in the explanation or understanding of life.

Science has largely avoided this “mind-body” problem, leaving the deepest questions to philosophy and otherwise indulging itself with a single-track view of reality. It rejects the view that reality may itself be proactive, and instead formulates a view of reality based on physics; as dead, purposeless, and meaningless. Life must then be seen to “emerge” as an improbably accident or, as many have come to believe, a complication of physical processes with all the appearances of mind or spirit being mere illusion.

We add to this strange circumstance in science, the phenomena of globalization and human societal development. In the struggle for prosperity and survival, as well as in the search for meaning and a “world order,” people are confronted daily with the consequences of these world views. Is it a view of infinite opportunity and creative potential? Or one of determined outcomes, incontrovertible laws, and blind selection of who will survive? In short, are we, as living beings, participants in constructing reality, or are we victims of the blind forces that created us?

The most fundamental question—what is life?—itself has profound implications for human society, and by extension, the future of all life on Earth. How we answer this question determines what we believe about ourselves, others, and other life forms. It determines what kind of government and other social systems we will construct. It determines how much we will attempt to learn from different cultures, respecting and preserving their diversity; or alternatively how much we will attempt to change them toward one dominant paradigm that is logically best.

An understanding of natural systems and complexity as the fundamental basis for life may offer an alternative to the polarized views contrasted above. Where we have constructed a paradox between art and science, perhaps there can be a nexus—a perspective from which both may emerge as mutually valid

understandings of a more complex reality than either can describe. The challenge is how to retrain ourselves so that such an integrated world view can be applied to actual situations, policies, economies, and human enterprises.

With these thoughts, we extend the CALL FOR PAPERS in the Special Integration Group of the ISSS on What is Life/Living. This group was inaugurated in 1999 expressly to explore the integration of observational and experiential views of life.

Spirituality and Systems Charles Smith muinuddin@msn.com

235 E. 22nd. Street, New York, New York 10010

Our SIG continues with an emphasis on open exchange, collaboration and dialogue, all of which seem to be in agreement with spirituality and viable systems behaviour. For the ISSS 2001 meeting, papers might address one or more of the general conference themes of service, of “unity, diversity and humanity”, and/or the more specific focus on the emerging world system. In addition, there is a possibility of exploratory workshops/dialogue on topics of special interest, such as spirituality and shamanism, ancient and modern learning communities and challenges in communication between science and spiritual disciplines.

Business and Industrial Applications Enrique G. Herrscher Eherrscher@ideamail.com.ar

As in the last two ISSS annual meetings, this SIG will organize discussions at the Monterey meeting around two Symposia.

SYMPOSIUM I: CORPORATIONS AND THE SERVICE TO HUMANITY

a. Is the action of corporations, in the aggregate, useful or harmful for humanity? b. From a dynamic viewpoint: is this improving or deteriorating? c. What can we, as systemists, do about it? d. What can ISSS do about it?

SYMPOSIUM II: ECONOMIC SYSTEMS AND THE EMERGING WORLD

a. Within the unity-diversity spectrum, what are the major differences that characterize the emerging world vis a vis the developed countries? b. What are the major consequences of these differences for business and industry, focusing on Africa, Latin America and other regions of the southern hemisphere? c. How do the changes in technology affect these situations? d. How do the preceding factors affect business education in the emerging countries?

METHODOLOGY

As in past meetings of this SIG, the paper SUBMISSIONS are welcome, but paper “stand-alone” PRESENTATIONS are discouraged: each author will state briefly what he or she has in mind, and immediately a joint discussion will take place. We will favour papers strictly focusing on above themes. Other papers are also welcome, but will be handled on a poster session basis, with discussions on site if time permits.

**Women and Children in Community Systems Anne Nelson Nelsongroup@worldnet.att.net
2442 N.W. Market St., #112. Seattle, WA 98107 USA Tel/Fax 1-206-282-5994**

Papers are invited that identify themes and research interests which account for the perspectives, interests, and needs of children and women in social systems. More than half of the world's population is women. Children are the future. Both groups are affected by different systems constructs, with formal and informal needs to have representation in the community or social system in which they live. Papers that apply systems thinking and understanding to family systems, community systems, and other social systems as related to the development of 'service' systems are particularly welcome. Papers are invited from anyone who is interested in developing scholarship focusing on this area of study.

**Evolutionary Learning Community Kathia Laszlo and Alexander Laszlo Syntony.Quest@usa.net
Alexander Laszlo, Ph.D. and Kathia C. Laszlo, Ph.D. Syntony Quest, 1761 Vallejo Street, Suite
302, San Francisco, CA 94123-5029. Phone/Fax: ++415/346-1547. EMail: info@SyntonyQuest.org
<http://www.SyntonyQuest.org>**

We cordially invite you to join us at the 45th annual meeting of the International Society for the Systems Sciences (ISSS). Specifically, we hope you will consider contributing a paper for presentation in the ELC (Evolutionary Learning Community) Special Integration Group (SIG) that it is our pleasure to co-chair.

The 44th meeting, held 16-22 June 2000 in Toronto, Canada, was a great success, with 18 people from all over the world involved in the ELC SIG presentations. Our SIG met over the course of three days, and each session was both well attended and well received.

As described on the ELC SIG webpage mentioned below, the ELC SIG once again invites contributions on the theory and practice that informs Evolutionary Systems Design and the emergence of ELC. In particular, given the theme of this conference on "Systems Science in Service of Humanity," we welcome contributions that focus on the challenges and opportunities of the evolutionary corporation.

Please visit the webpage dedicated to the ELC SIG. There you will find background information on previous sessions as well as links to the Website URL of our sponsoring organization (Syntony Quest): <http://issss.org/sigs/sig29elc.htm>

Duality Theory Vitaly Dubrovsky Dubrovj@icaarus.som.clarkson.edu

In the general systems context, duality (polarity, complementarity, dialectics, trialectics, symmetry, opposition, contrariety, unity, etc.) can be viewed in at least three different ways: (1) as a fundamental isomorphy observed across variety of systems studied by different scientific disciplines; (2) as a fundamental logical principle common to all historical times and cultures; and (3) as an integral attribute of personal reflexion. At the same time there is a common strive to overcome duality and acquire unity. It is a common understanding, that the desired unity assumes viewing, transforming, and combining together the sides of duality in such a way that a new reality, wholeness, or synergy is discovered, constructed, or achieved. The key word describing such understanding is "system."

You are invited to participate in an attempt to build theory of duality, and thus, to contribute to articulation of the general systems approach.

Papers on any topic related to the duality theory are invited. The following topics are preferred:

- Duality and general system approach
- Duality and general system principles
- Examination of examples of duality in different disciplines and appropriate generalizations.
- Relationships of duality and other systems isomorphies (e.g. hierarchy, evolution, and emergence).
- Taxonomies of dualities.
- Logical and philosophical issues of duality.
- History of duality ideas in science, philosophy, and theology.
- Duality and human consciousness and conscience.

Familiarity with the following previous work may be helpful:

Troncale, L. R. and Voorhees B. H. (1983). Towards a formalization of systems linkage propositions. *General Systems*, Vol. XXVIII, pp. 187-195.

Contributions to Duality sessions. (1985). In B. Banathy (ed.) *Proceedings of The International Conference of Society for General Systems Research*, Los Angeles, May 27-31. Intersystems Publications, pp. 136-199.

Voorhees, B. H. (1986). Towards duality theory. *General Systems Bulletin*, Vol. XVI, No 2, pp. 58-62.

Contributions to Duality sessions. (1999). In B. Banathy (ed.) *Proceedings of The International Conference of Society for General Systems Research*, Asilomar, June 27-July 2. Abstracts.

Contributions to Duality sessions. (2000). In Janet K. Allen and Jennifer Wilby (eds.) *Proceedings of The International Conference of Society for General Systems Research*, Toronto, Ontario, Canada, July 16-22. Abstracts.

**Human Systems Inquiry Arne Collen Acollen@saybrook.edu
POB 4950, Walnut Creek, CA 94596 USA.**

As Human Systems Inquiry is an emphasis in the Systems Sciences, we invite you to contribute a paper relevant to Human Systems Inquiry in the Service of Humanity. The purpose of the SIG is to provide an arena for ISSS members to present, exchange, and discuss: 1) ideas and viewpoints concerning issues in systems methods and methodologies relevant to human beings and the human condition; 2) applications of systems ideas to systems practice in human contexts; 3) innovations in systems methodology; and 4) systemic case studies conducted in, with, or by human activity systems.

For consideration, submit your abstract of 300 words maximum that includes a sentence relating the paper directly to the conference theme as well as any one of the four SIG focus areas stated above.

**Living Systems Analysis James R. Simms JRSimms@juno.com
9405 Elizabeth Court Fulton, MD 20759**

The Living Systems Analysis SIG is interested in general systems principles, theories, and properties of life. Cells, organs, organisms, groups, organizations, societies, and supranational systems are recognized levels of living systems. Papers dealing with characteristics or phenomena that can be generalized across two or more of these levels are welcome, as are papers that employ principles and theory of living systems to analyze or synthesize systems or components at a particular level. Papers linking living systems theory

to other science and bodies of theory (e.g., biology, physics, chemistry, hierarchy theory, duality theory, accounting theory, economics, behavioral theories) are encouraged.

We are especially interested in papers that help unify the sciences and that treat basic principles and theories for making complexity more understandable. Development of relationships between the concepts of information in biology and in the information sciences are of particular interest.

We hope to have joint sessions with other SIGs. If your paper has links to other SIGs such as Business and Industrial Systems Application, Hierarchy Theory, Legal and Political Systems, Information Systems Design, Education, or Medicine and Health, please note that in your cover letter and on the title page. We will endeavor to organize a joint session with any SIG for which we have linking papers.

We are making an effort in the paper solicitation process to extend the area of living systems science further than it has been in the past. It is felt that an even greater range of papers would help improve the meeting. Thus we are making a special plea for papers which would extend living systems science. Also specifically we would like to include sessions on subsystems, application, and single case studies.

The Primer Tom Mandel ThomMandel@aol.com

Ken Wilber is a transpersonal psychologist who has formulated an Integral Theory of Consciousness which integrates approximately twelve different fields of consciousness studies (from East and West). He accomplished this, he says, by noticing that each of the thousands of books he has read seemed to fall into a pattern, a pattern he eventually isolated and now calls the Four Quadrant Integral Theory of Consciousness. Simply put, Wilber says, investigative studies seem to fall into one of four categories: Internal, External, Object, and Interobject.

Wilber also challenges the systems sciences with a comment in his latest book saying that systems science is monological. "But, as we saw, the specific difficulty with empirical science of any variety is not that it is atomistic or holistic, analytic or systems, but rather that it is empirical and monological in the first place. Systems Theory does not alter that in the least: it merely continues the monological madness by other means, which, in this case, is all the more insidious because its proponents imagine that they have overcome the problem, whereas they have simply cloned it." (Patterns Sept. 1998).

Our answer to that challenge.

The Primer group invites from ISSS members, introductory essays of approximately two-four pages in length which will serve to introduce the particular aspect of systemics with which they are most familiar. The essay should be divided into four interrelated levels of description (see von Bertalanffy, Banathy Four Domains of systemic inquiry). First is a general or philosophical statement of principles. The second is an application of those principles in a specific theory. The third is a plan or methodology, and fourth, to act on all of the above. In addition to the essay, a single sentence which sums up the entire essay should be provided, and also a paragraph which explains the single sentence in greater detail. These may be extracted from the essay if available. A general introduction will also be required as the beginning of the essay. These essays will then be hyperlinked on the ISSS website in such a manner that all the single sentences may be accessed across the board, and likewise, all the paragraphs. That is, the casual observer would be able to link across the holoarchy from facet to facet horizontally. At any time, the links will also be provided vertically such that any single facet may be accessed in greater and greater detail.

The essay should be concise and clear, It should contain a minimum of technical terms, and those that are used should be defined (like this). The essay should be written with the journalist (with no prior knowledge) in mind as the typical reader. It is requested that a link or reference to a research paper or actual project be also provided if available.

For reasons of consistency, the Primer definition of “system” might be used — A system is like a family of relationships among the members interacting as a whole.

Abstracts should be 300 words or less, and could be a brief outline of the proposed essay. A poster presentation will be in effect. Please plan to present your essay as a poster during the 2001 Conference.

**Applied Systems and Development (Centre for Applied Development Studies), Dennis Finlayson, dfinlayson@lincoln.ac.uk
Centre for Applied Development Studies, Lincoln School of Management, University of Lincolnshire and Humberside, Brayford Pool, Lincoln, LN6 7TS, England. Tel: 0044 1522 886252, Fax: 0044 1522 886032.**

The Special Integration Group in Applied Systems and Development invites contributions for participation in its paper sessions at the 2001 annual meeting of the ISSS in Asilomar, California. Our mission is to develop, demonstrate and apply appropriate approaches in active association with all parties affected by or involved in development projects and programmes. Of central importance to this mission is an awareness of the subtle inter-relationships among decision processes at local, regional, national and global scales. Such ideals as sustainability, participation and partnership are easy to proclaim. Yet the realities are complex and ever-evolving. This makes the search for viable ways forward a demanding task, and the evaluation of progress against any such ideals a many-faceted process. This SIG is concerned with the application and discovery of appropriate management theory and methods for interventions so that development and funding agencies can be adequately informed. We have a particular interest in exploring issues of managing physical, economic and community development through collaborative ventures which may involve local and national government, voluntary organisations and small as well as larger business enterprises. In terms of management methods, we are interested in a range of approaches based on systems thinking: of flexible group decision techniques for project appraisal and appreciation of local community perspectives.

**Hierarchy Theory jmwilby@dial.pipex.com
Jennifer Wilby, 59 Browning Road, Pocklington, York, YO42 2GN, UK.**

The Hierarchy Theory SIG invites papers relating to the study of hierarchical structures and their relationships in theory and practice. Hierarchy theory views systems as a set of ordered levels with a governing-governed relationship between the levels wherein the hierarchical levels are the subunits of the whole system of interest. Further, the levels within the hierarchy are defined by the scale of observation chosen by the researcher (observer) and exploring this process of choice of scale is also of interest within the SIG. Abstracts are invited from all fields of research whether natural or social systems, and research or practice.

Information Systems Design and Information Technology

Bela Antal Banathy BBanathy@worldnet.att.net

38 Seca Place, Salinas, CA 93908, USA, Tel: 1-831-375-7614

During the past three decades we have made spectacular advances in communications and computing technologies. It is clear that in the next century, communications, storage, and processing capacities, as well as the human-machine interface will be developed to levels that are at present unimaginable. In effect, we will greatly increase the surface area of human-machine contact. Perhaps more importantly, we will try to elevate the contact to increasingly higher abstraction. With many of the technical problems that constrained the information systems design efforts of the past having been solved, we can focus more clearly on the systemic foundations of the design task. Papers addressing this general topic are invited. To lend more focus to the sessions, three themes are proposed: 1) The conceptual foundations that inform the partitioning of tasks between human beings and machines; 2) Information systems as a means of extending the existing biological infrastructure of information processing in organizations; 3) Power and the internet. These topics can be addressed at the level of an individual human being, that of a group, a community, the larger society, or combinations of these. In each case it is of particular importance for us to ask fundamental questions involving the epistemological and ontological aspects of human-machine interaction.

Systems Modeling and Simulation

Dr. Robert A. Orchard, orchard@acm.org

Prof. Computer Science, City University of New York, at College of Staten Island, New York, and Institute for Advanced Systems, P. O. Box 640, Indian Rocks Beach, Fl. 33785, USA, Tel/Fax:1-727-593-2181.

A call for papers on understanding complexity through systems modeling and simulation. The principles behind modeling complex systems in order to make them tractable vary from practitioner to practitioner. Hopefully by observing enough validated models one can start to ascertain the meta-principles behind good modeling. Papers and models which elucidate these meta-principles and therefore make complex issues more tractable are invited, as well as papers that reason through complexity to formulate simpler models.

Systems Psychology and Psychiatry

Dr. Robert A. Orchard orchard@acm.org

Prof. Computer Science, City University of New York, at College of Staten Island, New York, and Institute for Advanced Systems, P. O. Box 640, Indian Rocks Beach, Fl. 33785, USA, Tel/Fax:1-727-593-2181.

A general call for papers on the complexity of psychological processes, mechanisms, problems and solutions. Papers from all modalities of psychotherapy (i.e., Gestalt, TA, Rogerian, NLP, Ericksonian Hypnotherapy, Brief short term therapy, Family therapy, etc.) and both Jungian, Freudian and other schools are invited. Of special interest are those simple elegant solutions to a perceived complex presenting problem. Papers dealing with understanding of the complexities of the social environment and policies vis-a-vis juvenile mental health issues are welcome. All papers submitted must contribute to an understanding of complexity and help in making complexity more tractable.

Designing Educational Systems

Patrick M. Jenlink, pjenlink@sfasu.edu

P.O. Box 13018-SFA, Nacogdoches, TX 75962

Email attachments in Microsoft Word only.

You are invited to submit papers that respond generally to the overall theme of “Designing Educational Systems for the Betterment of Humanity”. The theme for the Designing Educational Systems SIG is focused on improving the human condition through designing educational systems that serve humanity

1. Educational Systems Design as Social Discourse and Action - Designing educational systems that address issues of social justice, equity, and caring in the context of growing diversity. Examples of social discourse, including dialogue, post-formal, ethical, and design, and how these types of discourse are used in the creation and sustainment of educational systems that contribute to human betterment at all levels of society.
2. Educational Systems Design in the Service of Others - Examining how systems and educational scholars and practitioners-scholarly practitioners-can serve on the behalf of “others” by seeking to create new relationships within and across boundaries of existing social systems, and/or addresses the power of diversity in the solving of human problems.
3. Designing Educational Systems as 21st Century Agoras - Seeking models, exemplars, and idealized designs of educational systems that are “public spheres”, premised on dialogue and democracy, with the purpose of reconnecting individual citizens and creating an authentically engaged public who embraces the responsibility for the education of future generations.
4. Connecting Society, Locally and Globally, through Educational Systems -Understanding the role of educational systems as the nexus for connecting systems within and across societies. Research papers, philosophical position papers, and theoretical papers that reflect considerations for the systemic relationship of all social systems, particularly as related to educational systems design focused on ensuring a better future of humanity.
5. Integrating Educational Systems through Design - Investigating models, studies, and position papers that focus on how educational systems (i.e., public education and higher education, systems education and K-12 education, parochial education and public education, etc.) have been integrated through systems design and how these integrated systems have addressed social issues and cultural problems in ways that hold promise and potential for serving humanity.
6. Open Theme - General papers on designing educational systems and related systems design efforts concerned with education that do not fit one of the other themes, but which addresses the larger theme of the ISSS 2001 Conference, Systems Science in the Service of Humanity.

An opening general session for the SIG will be scheduled to present the week’s program. The sessions will be organized so as to maximize interaction among presenters and participants. Each presenter is asked to include with their abstracts a set of 3-5 “trigger” questions selected to promote/provoke a conversation about the presenter’s issue or premise. Presenters are asked not to read their papers, but rather present their work in a conversational style that invites participation from the audience in attendance. Presenters should limit their presentation to 10-15 minutes, with the expectation of participating in ensuing conversations.

Abstracts of papers (approximately 300 words) should be submitted to Patrick M. Jenlink, SIG Chair. Abstracts will be reviewed and sorted for the program by SIG chair Patrick Jenlink. Presenters should bring 20 copies of their papers, along with triggering questions that may be used to guide conversations. These will be made available to interested participants.

Research Toward General Theories of Systems

Helmut (Ken) Burkhardt burkhard@acs.ryerson.ca

Chair, ISSS SIG on Research Toward General Theories of Systems Adjunct Professor of Physics, Ryerson Polytechnic University, Toronto, Ontario, Canada, M5B 2K3 Tel: 1-416-979-5079x7246, Fax: 1-416-698-1214

The SIG on Research Toward General Theories of Systems is proposing sessions on the development and applications of General Science Theories at the 45th Annual Meeting.

It is impossible to solve problems related to the complex social and ecological issues by using narrow disciplinary knowledge, or good intentions alone. Thinking tools that match the width of the problems are needed. One must develop and apply broad, general science theories based on universal concepts and universal algorithms thinking.

We invite contributions to such basic epistemological topics as:

* Definition and classification of systems: Kenneth Boulding and beyond. *Hierarchy of sciences: relation between theories of everything, general science theory, ecology, chaos theory, general systems theory, living systems theory, cybernetics etc. * Language, mathematics and computer science as transdisciplinary knowledge tools. * Broad concepts: the merits of abstraction in science and in common language. * Universal algorithms of thinking applicable in many disciplines. * The role of art and spirituality in creating new science. * The ethical dimension of holistic science. * Will general systems science lead to general engineering, eco engineering, and social engineering as advanced biology led to genetic engineering?

Application of universal knowledge tools to the theme of the conference, and utilization of general science theory to better and broaden curriculum and education are welcome in the proposed sessions.

Futurism and Change

Curt McNamara c.mcnamara@ieee.org

4010 Hayes St. NE Mpls. MN 55421

The Futurism and Change Special Integration Group of the International Society for the Systems Sciences (ISSS) welcomes submissions for our 2001 meeting in Asilomar. Futurism has been described as the evolution of possible future states. These states may or may not be desirable, so the practice of futurism requires tools to move systems towards or away from them. Systems science contains these tools, as well as tools to examine, analyze, and create possible futures. It has been said that the only constant is change. The systems sciences inform us that all systems change, yet it is the nature of a system to resist change. Using the science of systems to study and inform change will be a hallmark of the 21st century. The theme of this years meeting is explore how the system sciences can support service to humanity. Service consists of fulfilling a need, yet needs are only known via a model of self or other. Such models are also the basis for intentional systems change, and are the foundation of futurism. It is therefore our task to apply systems tools and thinking to service, models, and change. Submissions are welcomed on the above or related topics. Send abstracts, speaker suggestions, panel contributions, and offers of tutorial help to Curt McNamara.

Thermodynamics and Systems Theory

Eli Berniker bernike@plu.edu

Pacific Lutheran University Tacoma, WA 98444 USA - Home Tel: 1-253-539-4221 ; Office: 1-253-535-7289 FAX 1-253-535-8723

“Is the future given, or is it under perpetual construction”.

Ilya Prigogine The End of Certainty 1996

Thermodynamics and Freedom - In honor of our humanity and to Harold Nelson’s call for systematic approaches serving effective and ethical human action, I want to shift our focus to the thermodynamic foundations for human freedom.

The essence of human freedom is that we are, as individuals and social entities, causal agents constructing our future and not merely outcomes of natural forces and systems. We may value freedom but our sciences, including a better part of systems science, deny any ontological basis for our freedom.

Thermodynamics can provide a scientific basis for freedom since it accepts the fundamental uncertainties of the physical universe. Human freedom is linked to uncertainty, indeterminism, and irreversibility, all aspects of a thermodynamical understanding of our universe.

So! Our challenge, in this call for papers:

What are the links between thermodynamics and the sciences that amplify our understanding of human freedom and purposeful action?

In Prigogine’s terms, purposeful action is a non-equilibrium process exhibiting self-organization by a dissipative structure, people. This is new territory so take all the freedom you need to make whatever connections are worthy of discussion. We want a wide ranging set of panels. We especially welcome contributions from members across the entire spectrum of ISSS.

Processes and Human Processes

Hector Sabelli, hsabelli@rpslmc.edu

(Chicago Center for Creative Development) —Hector Sabelli, 2400 North Lakeview, Suite 2802, Chicago, IL 60614, USA, Fax: 1-312-348-4499

This special integration group (SIG) of the ISSS is devoted to studies of creative processes, their scientific understanding, and practical ways to foster them. An emerging world view regards natural and human processes as spontaneously creative—in contrast to the standard focus on invariant features, that portrays processes as either determined or accidental. Interactions co-create novel and complex organization, from matter to life and consciousness. Both physical and mental processes are made of the same energy, different only in the complexity of their organization. This process approach originates with Greek physiology, the foundation of science and philosophy, a comprehensive theory of natural and human processes that took living matter as a model for the spontaneous creativity of all matter. The first numerical law of science stated the relation between musical harmony and the length of chords. Correspondingly, a particular bent of our SIG has been a focus on both mathematical form and biological and psychological processes.

The Process SIG was given impetus by professor Ilya Prigogine, the father of the process approach in modern physics, at the 1997 Seoul meeting of the ISSS. For the Toronto meeting we plan one panel and one paper session. Physical, chemical, social, and psychological processes are considered. We are particularly interested in studies that analyze how processes at various levels of integration interact in complex systems. We seek testable scientific theories, practical methods, and empirical data. Here we invite contributions for the Toronto meeting of the ISSS in the following areas:

- (1) Process Methods. Papers on analytic methods to study novelty, complexity, diversity, episodic patterns (complexes), asymmetry, and all other features of creative processes in time series and other empirical data.
- (2) Empirical Applications of the Process Paradigm. How can one apply the process approach in scientific research, clinical practice, organizational development, or social action? We particularly welcome contributions that include empirical data.
- (3) Advances in Process Theory. Process theory of processes is an evolving set of scientific hypotheses. A hypothesis is scientific when it is grounded on observation, clearly formulated (mathematically whenever possible), experimentally testable, and practically applicable. Processes must be described in terms of physical dimensions, plus additional dimensions of information and organization not included in standard physics.
- (4) Mathematical Models. Papers on bios, chaos, recursive equations, strange attractors, and other mathematical models of natural processes.

Systems Science in the Service of Humanity

45th Annual Meeting of the International Society for the Systems Sciences July 8 - July 13, 2001

Distributed Site: Bulgaria, Sofia

<http://members.spree.com/technology/icsr/>

Chair: Magdalena A. Kalaidjieva, kalaidji@mbox.cit.bg

Systems science is historically seen as a very young scientific domain, and for Bulgaria it is even younger. The recent years showed that it has gained importance especially for this region of the world. A broader popularising of systems sciences lead to establishing an institutional frame for research. However the scientists and practitioners interested and convinced of their advantages are already a much broader community. This made it possible and welcomed to organise the distributed site in Sofia.

We welcome participants and presentations to all subthemes announced for the 45th Annual Meeting and will give the floor to global communication and discussion. We are in the process of also organising local discussions on some of the subthemes both by physical and tele-presence. The time between abstract deadline Jan 15th and final 2nd April will show to us how to do it - after we know who of the persons interested in moderating the discussion will be able to attend. The moderators we have chosen are excellent scientists in their special domains with much interest in systems thinking, analysis and comparison. Some of them will submit their own papers.

Besides this we will organize additional panels with moderators, people who have been long-involved in systems sciences, and choose subthemes, which have a special local importance and people showing

interest to present. As you see, these subthemes are sub-subthemes to the ones generally announced, and this induces the openness to respond to a broader scope of participants. We do not limit, but give starting options for expansion and will inform you on the World Wide Web page or by email (if you indicate that you prefer so).

Local Starting Options

Control Systems - Magdalena A. Kalaidjieva kalaidji@mbox.cit.bg; Energy and Power Industry Systems - Lazar Petkanchin; Biosystems - Angel Galabov; Medical and Healthcare Systems Prof. Dr. Sc. Ph D Eng.

Lazar Petkanchin - is an experienced scholar in electrical and power plant systems and long time consultant for the power industry.

Prof.Dr. Sc. Dr. med. Angel Galabov - is a leading scholar in biosystems, biotechnologies, and working close with genetical engineering systems scientists.

We are also open for introducing panels or round table discussion far differing from the topics above and are already in the process of organising one on the conclusions from the Eastern and South-Eastern European transitions under the viewpoints of systems sciences subthemes.

Enthusiasts from the Union of Scientists of Bulgaria went through all official paths and have now full support. This means that we will be able to use the organisation's structure for our information dissemination and are open to participants. I am now working on a similar engagement with the Medical University Sofia, the Sofia University, etc.

The Sofia ISSS web page invitation was developed at ICSR BAS.
Welcome to Sofia!

Magdalena A. Kalaidjieva, Ph D, Associate Professor, Institute of Control and Systems Research, BAS
Vice President for Conferences, International Society for Systems Sciences
Tel. 359 2 9884030, Fax 359 2 703361
http://www.ifsr.org/personal/m_kalaidjieva kalaidji@mbox.cit.bg

ISSS 2001
PAPER STYLE GUIDELINES
Editors: Janet K. Allen and Jennifer M. Wilby

DEADLINE FOR FORMATTED PAPERS IS APRIL 2, 2001. SUBMISSIONS AFTER THIS DATE WILL NOT BE INCLUDED IN THE CONFERENCE PROCEEDINGS.

SEND PAPERS TO:

JENNIFER WILBY

Phone: +44-1759-302718

E-mail: jmwilby@dial.pipex.com

Mailing address:

Jennifer Wilby

59 Browning Road

Pocklington

York YO42 2GN

England

PREPARATION, LENGTH AND PRINTING

A printed (hard) copy of all papers must be submitted along with an electronic submission on a 3.5" diskette. Alternatively a printed copy may be submitted by mail and the electronic version submitted by E-mail – please be sure that you note this on both submissions. However, if papers are submitted by E-mail, they should be sent as attached files with a description in the body of the message as to what word processing package has been used to create them.

The printed copy of the paper will be used for review and to ensure correct layout. The primary author's last name and page numbers should be written in blue pencil on the lower right hand side of the back of the hard copy of the manuscript. A copy must also be sent to your panel chair **IF YOU KNOW WHO THIS WILL BE.**

Insert page numbers on the electronic version in the footer of each page beginning with page number 1, centered in 12 point regular type (not bold).

Insert headers on the top of each page, centered in 12 point bold type using a shortened version of your paper title. Headers should not exceed one line.

Disks can be either IBM or Macintosh format; the files should be saved in Microsoft Word format, Version 6 for either Macintosh or Windows machines. Any other word-processing package must be approved prior to submission. Artwork and tables should be pasted into the Word document.

The length of the paper should not exceed 20 pages, including title/summary page and references. Do not start a new page after the title and abstract. Pages must be single-spaced. Type on one side only. Skip a single line between paragraphs of text. Do not indent the first line of each paragraph. Paragraphs should be both right and left justified.

TYPEFACE, PAPER SIZE AND MARGINS

The preferred typeface is Times New Roman. The type size is 12 points. Please use the page set-up command to ensure that your paper is prepared on US LETTER size paper (8-1/2 by 11 inches). Leave one-inch margins at the top and the bottom of the page; 1.25 inches on both right and left sides.

TITLE AND AFFILIATIONS

The title should be written on the first line of the first page, centered in upper case bold capital letters, 12 point font.

The authors' names should be centered two lines below the full title in upper and lower case bold letters.

Affiliation and mailing address should follow on the next line, centered in upper and lower case letters (not bold). The corresponding author (to whom correspondence should be sent) should be indicated on the manuscript.

Please enter a short running title as the header at the top of each page except the first. This running title should be centered, 1/2 inch from the top of the page in 12 point type in bold upper and lower case letters.

ABSTRACT AND KEYWORDS

Two lines below the title and affiliation, type the heading "ABSTRACT" and then after one line space, start a brief abstract as the first paragraph of the paper. You may use your program abstract or a suitable alternative.

At the end of the summary, skip a line and then type "Keywords:" (underlined and followed by a colon) followed by up to five (5) words that describe the focus and contribution of the paper. The summary should follow the title, author's name, and mailing address on the first page. Skip two lines and then begin the body of the paper (after an Introduction heading, if needed) immediately after the summary. Do not begin a new page.

HEADINGS

Headings are NOT NUMBERED. All major headings are centered in bold in 12 point font. Do not put a period after the text of the heading. Leave two lines above a major heading, and one line clear below before the start of the next paragraph or second-level heading.

Subheadings (Second-Level Heading)

Subheadings are flush left, in 12 point type and bold and upper and lower (title) case as shown. There should be one line space before and one line space after this level of heading, as shown in the subheading for this paragraph.

Sub-subheading Looks Like This

Sub-subheadings are flush left, in italics, upper and lower (title) case and in 12 point type. There should be one line space before this level of heading, but no line space between this heading and the following paragraph (as illustrated above).

ILLUSTRATIONS

The electronic version of the art should be included on the diskette or E-mail transmittal and incorporated into the word-processing file. **DO NOT FLOAT GRAPHICS OR TABLES WITH TEXT**, they must be placed where called approximately or all placed at the end of the file.

Figures should be labelled as “Figure X. Description of Diagram.”

Figure captions should be typed directly below the figure, in bold 12 point type, upper and lower (title) case and centered.

TABLES

Table captions should be centered below the table. Tables should be included in the manuscript proper and referred to in the text as “Table X. Description of Table.” Table titles should be in bold 12 point type, upper and lower (title) case and centered..

EQUATION NUMBERS

When numbering equations, enclose numbers in brackets [] and place them flush with the right-hand margin. Refer to them in the text as “Equation [x]”.

REFERENCES

List bibliographic references at the end of the paper under the major heading “References”. List authors alphabetically by the first letter of the first author’s last name. References should be identified in the text of the paper by typing the corresponding name and year in parenthesis. If a page number is included, it should be set as (author, year, page number). **DO NOT NUMBER REFERENCES**, they must be alphabetical and unnumbered.

References should have a half-inch hanging indent as shown below and there should be no extra lines between references. Book titles and names of journals should be printed in italics, not underlined. The format for the reference section should be as follows:

Author, A. (1991). *Title of Book.*, XYZ Press, Place of Publication.

Author, B., and Author, A. (1995). “Title of Paper,” *Journal.*, 3(1):1-20.

Author, C., Author, A., Author, B. and Jones, G. (1996). “Title of Paper,” in *Title of Book*, (E. Editor, ed.), XYZ Press, Place of Publication.

For multiple publications in the same year by the same author:

Bauthor, B., and Aauthor, A. (1995a). "Title of PaperA," *Journal*. 3(1):1-20.

Bauthor, B., and Aauthor, A. (1995b). "Title of PaperB," *Journal*. 16(4):25-50.

NON-CONFORMITY OF SUBMISSIONS

Paper submissions that do not conform to these guidelines WILL be returned to the author(s) for re-submission before the Proceedings deadline. Revised papers must be re-submitted in both a hard copy and a diskette, or an electronic version, that are clearly labeled "revised".

NOTE: Do not send your full-length paper and diskette to the Conference Organizer.

Papers must be submitted to Jennifer Wilby. You may send copies of the paper, if requested by them, to your SIG Chair, panel Chair or co-host contact person.

AUDIO-VISUAL REQUIREMENTS

Overhead projectors will be provided for all paper/symposium panels. If you have more specialized audio-visual needs, please notify the local organizers when you submit your registration. It may not be possible to respond to last-minute requests.

OTHER CONFERENCES AND MEETINGS OF INTEREST

13th International Conference on Systems Research, Informatics and Cybernetics (InterSymp-2001)

**Baden-Baden, Germany
July 30 to August 4, 2001**

<http://www.ias.edu>

For further information, please contact President Prof. G. Lasker, University of Windsor, Canada
tel +1 519 944 4378 fax +1 519 974 8191.

43rd Annual Conference of the Operational Research Society (OR43)

**4-6 September 2001
University of Bath, England.**

We are issuing an open invitation to readers of the ISSS Bulletin to present papers at the 43rd Annual Conference of the Operational Research Society.

We are organising two streams for this conference: one on “Systems Thinking” (encompassing all systems approaches which have been, or could be, applied, to intervention) and the other on “Operational Research for Social Improvement” (encompassing community OR, environmental planning and management, OR for development, the ethics of OR practice, etc.).

It seems to us that we are experiencing an international resurgence of interest in systems thinking, and attention is also being turned in countries all over the world to the question of how to address both global and local issues of environmental degradation, social exclusion, poverty, inequality and community fragmentation. It is therefore vitally important that we share our insights and build a community of practitioners that can take the research agenda forward. Our aim is therefore to bring together as many people as possible who are engaging with these themes, with the intention of promoting an intense and lively debate with real implications for systems and OR practice in the service of social improvement.

You may ask why we are organising two streams when we are obviously viewing systems thinking and social improvement as connected. There are two very practical reasons for this. The first is that there are OR practitioners working in the areas of community development and environmental planning who are not explicitly working with systems ideas, and we do not want to exclude these people. The second reason for running two streams is that we want more people to get involved than we could accommodate in just one, and therefore it makes sense to run two with slightly different emphases.

You are free to submit to just one of the streams, or if you like you can do presentations in both (as long as they are different). Your paper(s) can focus on theory, practice or a combination of the two. OR43 will provide a great opportunity to meet others with similar interests and to communicate with a wider audience, so we really want to encourage you to participate. Please note that there will be no conference proceedings, but abstracts will be published in the conference agenda. We are aware that, with the time

pressures people are under nowadays, writing a conference paper can be a disincentive for participating in a conference — but there is no such problem with this one, so give it a go!

If you would like to submit a paper, we need to receive a title, an indication of which stream you want to be in, plus your name and address, by 15 January 2001. We hope that late applicants will be accommodated, but we cannot guarantee it.

You will need to have booked for the conference and paid the conference fee by 31 May 2001. The fee has not yet been set, but to give you an indication, last year it was £329 for OR Society members and £376 for non-members. Also, accommodation tends to be priced between £45 and £65 per night. The exact costs should be set by the conference organisers in March 2001.

Abstracts of approximately 200 words will be required in June. We will send a sheet giving further information (e.g., about the timing of presentations and equipment available) to anybody who writes to us.

You can contact either of us by post at the address listed at the bottom of this e-mail. The rest of our contact details are given below:

“Systems Thinking”	“OR for Social Improvement”
Gerald Midgley	Wendy Gregory
g.r.midgley@hubs.hull.ac.uk	w.j.gregory@hubs.hull.ac.uk
+ (0)1482 466632 (phone)	+ (0)1482 465960 (phone)
+ (0)1482 466644 (fax)	+ (0)1482 466644 (fax)

We very much hope that you will be able to present at this conference, and look forward to an exciting and intellectually stimulating debate with real consequences for OR practice.

**23rd INTERNATIONAL SCIENTIFIC SCHOOL
INFORMATIONS SYSTEMS ARCHITECTURE AND TECHNOLOGY
ISAT’2001
DIGITAL ECONOMY – CONCEPTS, TOOLS AND APPLICATIONS
Call for Papers
Szklarska Porlba,
September 20 –21, 2001
POLAND**

The forthcoming ISAT’2001 is organised at Szklarska Porlba in September 2001 by the following two Institutes of the Faculty of Computer Science and Management, Wroclaw University of Technology:

- Institute of Control and Systems Engineering, and
- Institute of Industrial Engineering and Management.

The ISAT’2001 is co-organised by: Polish Systems Society, International Federation of Systems Research, and International Society for Systems Sciences.

The ISAT'2001 International Scientific School is subtitled DIGITAL ECONOMY – CONCEPTS, TOOLS AND APPLICATIONS in gain to address very hot topics in the field of today's Internet-based economy.

The general purpose of the ISAT'2001 is to discuss a state-of-art of contemporary information systems concepts and applications as well as architectures and technologies supporting. It is also to consider an impact of knowledge, information, computing and communication technologies on managing of the organisation scope of functionality as well as on enterprise information systems design, implementation and maintenance processes taking into account various methodological, technological and technical aspects.

The growth of Internet has dramatically changed the way in which information systems and data are managed, accessed and used commercially to conduct business electronically. ISAT'2001 is devoted to information systems concepts and applications supporting exchange of goods and services by using different business models and exploiting opportunities offered by Internet-based electronic business and commerce solutions.

ISAT'2001 is planned as a forum for presentation of original contributions and for discussions integrating different subjects of today's information systems planning, designing, development and implementation.

Contributions should be submitted (electronic submission is preferred) by an extended abstract (3 pages) till March 31, 2001 to:

Prof. Adam Grzech
Institute of Control and Systems Engineering
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Wybrzeze Wyspiaskiego 27
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e-mail: grzech@ists.pwr.wroc.pl

**SECOND CONFERENCE OF THE ITALIAN ASSOCIATION
FOR RESEARCH ON SYSTEMS (AIRS),
Castel Ivano (Trento), Italy.
November 9-10, 2001,**

Subject of the Conference is: Research for Systemics. Special session: Synergetics and Systemics. Opening lecture by prof. Dr. Herman Haken. Soon call for papers available in our web page:

www.airis.it

**UNITED KINGDOM SYSTEMS SOCIETY
SEVENTH INTERNATIONAL CONFERENCE
7 - 10 July, 2002
York University, York, UK**

Call for papers will be distributed in early 2001. For further information please email:
UKSSConference2002@hotmail.com

**NEW BOOKS
ISSS PUBLICATIONS and PUBLICATIONS BY MEMBERS**

Understanding Complexity
Edited by Jennifer Wilby and Gillian Ragsdell

Understanding Complexity includes thirty-one papers from the specially featured keynote, plenary and symposia presentations from a unique gathering of many of the leaders of the systems science movement. Included are papers from: Ackoff, Beer, Chaisson, Corning, Danesi, Fey and Lam, Friend, Haight, Holmberg, Ison, Jackson, Kash, Lee, Linstone, Midgley, Muller, Odum, Porter, Rapoport, Sabelli, Salthe, Shireman, Simms, Swanson, Troncale, Umpleby, Vallee, Wohlmuth and Zwick. These distinguished participants address the common theme of complexity, and the management of systems sciences, from the perspective of many different disciplines. The volume also includes summaries from past, present and incoming ISSS Presidents on their views of the past, present and future of the systems science movement.

EXPECTED PUBLICATION DATE: early 2001, approx 300 pp. Please contact Joanna Lawrence at Kluwer Plenum, 241 Borough High Street, London, SE1 1GB, UK for further details. Telephone: 44 20 7940 7492 and Fax: 44 20 7940 7495.

REDESIGN AND MANAGEMENT OF COMMUNITIES IN CRISIS
Donal de Raadt, ISBN: 1-58112-721-9; US \$19.95; paperback; 158 pp.

Leaders who must deal with crises afflicting their communities often discover that these crises depend upon normative factors transcending mere economics. The factors include such things as ethics, justice and belief. They also discover that there are not many tools available to analyse them and to assist their decision-making. The author presents a method to identify the primary factors that are threatening communities, to collect information about such factors, organise it and analyse it. More importantly, leaders can develop models to examine how factors interact with each other to sustain or to threaten the viability of a community.

These models can also be used to redesign and manage the community and ensure its long term viability. Although solidly based on theory, the object of this book is fully practical. The method is illustrated with

a real life application to Boden (a town in northern Sweden), furthermore, it incorporates an especially designed computer modelling tool (separately distributed) to assist its application. While the focus is on communities, the method can also be applied to other social systems, such as business organisations, voluntary associations, and government departments. The book should be of interest to managers, project leaders and other community leaders.

Order from: www.upublish.com/books/deraadt.htm or from your local or Internet bookshop

A NEW MANAGEMENT OF LIFE

With a foreword by R. G. Goodhew, Anglican Archbishop of Sydney

ISBN: 0-7734-8508-2; US\$69.95/£39.95; hardcover, 152pp.

This volume introduces a new approach to science that seeks to understand life and its management in a prophetic manner. This approach regards the soul and the mind as indivisible parts of humanity. There cannot be an educated mind without an educated soul. It proposes a new model for management to sustain and develop work, arts, families, government, industries.

“... a courageous, original, and timely contribution to a forgotten and most important ethical perspective on systems science and management.” - Kristo Ivanov, Umeå University, Sweden

“... I have found de Raadt’s work to offer profound scholarly insight into many of the problems we face today in the management of the Information Revolution and its impact on society. He provides a uniquely Christian perspective on systems science, and suggests application to wise living and management, of the individual and the enterprise.” - Douglas Grant, Swinburne University of Technology, Melbourne

Order from: www.mellenpress.com/html/deranewm.html
or from your local or Internet bookshop

A Revolution in Family Values: Spirituality for a New Millennium

John E. LaMuth

Fairhaven Book Publishers, Lucerne Valley, CA, USA

fairhaven-books@excite.com www.ethicalvalues.com

Publication Date Jan. 2001 ISBN# 1-929649-64-9 320 pages

The current interest in family values has undergone a significant revival as of late, a trend dramatized by the perceived decline in morals affecting American culture. The traditional descriptions of these ethical values, however, are typically treated as isolated entities, lacking much in the way of any moral connectedness across the board. Fortunately, the prospects for such a unified ethical system have finally been realized with the first radical revolution in ethical theory in over two thousand years, as offered in: **A Revolution in Family Values: Spirituality for a New Millennium**. This new moral system takes its foundations in the ethical values pioneered in classical Greek philosophy, augmented by the writings of the great church theologians of the Christian tradition. The distinctive groupings of ethical values defined within this system all appear to be linked on an intuitive level, suggesting a clear sense of underlying cohesiveness.

The key insight behind this innovation arises as a direct result of the well-established field of Systems Sciences, borrowing the crucial concept of the metaperspective, a higher-order perspective upon the viewpoint held by another: schematically defined as “this is how I see you-seeing me.” Extending this paradigm one level further gives way to the meta-metaperspective: accordingly defined as “this is how I see you-seeing me-seeing you.” Indeed, there does not appear to be any conceptual barrier limiting the degree to which reflection can serve as a basis for itself, ultimately extending to a potential 10th-order level of meta-abstraction. The higher virtues, values, and ideals collectively occur as subsets within this hierarchy of metaperspectives, each more abstract listing building upon that which it supersedes.

This ambitious task is respectively subdivided into four separate book headings, fully reflecting the comprehensive subject under consideration. Part I offers an initial description of the ten-level hierarchy of virtues, values, and ideals: providing a sturdy foundation for the subsequent contrast with the vices. Chapter 2 describes the most elementary, personal authority and personal follower roles, as designated by the ego and alter ego states. Chapters 3 and 4 further offer an in depth examination of the group authority and follower roles, introducing the personal ideals and cardinal virtues, respectively. Chapters 5 and 6, in turn, focus on the spiritual authority and spiritual disciple roles, providing an in depth analysis of the civil liberties and the theological virtues. Chapters 7 and 8 further examine the corresponding humanitarian roles, introducing the classical Greek values and ecumenical ideals, respectively. Finally, chapters 9 and 10 are reserved for a discussion of the transcendental realm, providing an in depth examination of the humanistic and mystical values. Each such chapter includes an extensive body of excerpts from both classical and contemporary literature, adding an entertaining sidelight to such a formal undertaking.

Part II furthers this discussion with an equally detailed examination of the remaining realm of the vices. Indeed, for every virtue there exists a corresponding antonym (or vice): e.g., love vs. hate, peace vs. war, etc. In keeping with this basic theme, each of the ten predicted classes of vice is further arrayed in a parallel ten-level hierarchy, identical in every respect to the arrangement previously described for the virtuous mode. This strict correspondence effectively doubles the number of terms to a grand total of 80, allowing negative transactions to be analyzed according to their potential to be converted into positive ones, and vice versa. Chapters 12 and 13 initiate this analysis with an in depth examination of the personal, group, and spiritual domains: focussing upon the personal vices, the cardinal vices, the civil liabilities, and the theological vices. Chapters 14 and 15 expand this analysis to the ecumenical vices and moralistic vices, specifying the humanitarian authority and humanitarian follower roles, respectively. Finally, chapter 16 examines the transcendental realm with an in depth look at the humanistic vices and the mystical vices.

This distinctive contrast linking virtue and vice further sets the stage for the following Part III, describing many exciting applications to information technology. Indeed, an earlier book by the author previously described how the motivational dynamics of the virtuous mode could be programmed directly into the computer, resulting in the first ethically based program for artificial intelligence. The further addition of the parallel hierarchy of the vices takes this task to its logical conclusion; serving as the basis for a patent pending interactive operating system taking fully into account both virtue and vice.

The darker side to humor and comedy is alternately seen with respect to the troubling realm of mental illness. Indeed, mental dysfunction can respectively be viewed as the humorous styles of transitional maneuver extended to the corresponding realm of the vices. Indeed, each of the major classifications of mental illness; namely, personality disorders, neuroses, mood disorders, and schizophrenia are fully

explainable in terms of such transitional terminologies (as suggested in the Systems Sciences concepts of the double bind and counter double bind). This dual complement of transitional power maneuvers (linking both virtue and vice) again double the number of predicted terms to a sum total of 320, a truly grand unified system indeed! All who find this subject intriguing are invited to join this voyage of discovery into such cutting-edge realms of ethical inquiry.

Systemic Intervention: Philosophy, Methodology, and Practice

Gerald Midgley

447 pages, Kluwer/Plenum, New York.

ISBN 0-306-46488-8, priced at \$40, £28 or NLG95.

This book aims to rethink systemic intervention to enhance its relevance for supporting social change in the 21st Century. Section One focuses on the *philosophy* of systemic intervention; Section Two on *methodology*; and Section Three on *practice*. Throughout the book, arguments are provided for why philosophy, methodology and practice *all* have a role to play in our thinking about systemic intervention.

Section One introduces the notion of *systems philosophy*, concentrating on the preoccupation of systems thinkers with undertaking ‘holistic’ or ‘comprehensive’ analyses. Of course, there is no such thing as a genuinely comprehensive analysis, so the defining feature of systems thinking is reflection on the *boundaries* of inclusion and exclusion. A new path is mapped out for the development of systems philosophy which dissolves the supposedly ‘fundamental’ dualism between subject and object that is commonly found in the philosophy of science.

Section Two of the book then goes on to examine the *methodological* consequences of taking this new approach. First, the concept of *intervention* is introduced. This is defined as purposeful action by an agent to create change, and is contrasted with observation. It is argued that observation, as undertaken in science, should actually be seen as a ‘special case’ of intervention, not as distinct from it. Next, the systems philosophy outlined in Section One is related to the methodology of intervention, and it is suggested that ‘systemic intervention’ is purposeful action by an agent to create change *in relation to reflection on boundaries*. This leads to the exposition of a theory of ‘boundary critique’, which deepens our understanding of what it means to reflect on boundaries in the context of intervention. Each of the following are discussed as part of this theory: the relationship between boundary and value judgements; the extension of the concept of boundary judgement to encompass concerns about how things *ought* to be (as well as what actually exists); the importance of wide-spread stakeholder participation in systemic intervention; and the need for agents to deal with the marginalisation of particular issues and stakeholders within social contexts.

Then the case is made for theoretical pluralism. This follows on logically from the theory of boundary critique because every theory is based on either implicit or explicit assumptions about the appropriate boundaries for analysis. Therefore, if it is possible to explore and use a variety of different boundaries during intervention, it is also possible to draw upon a variety of different theories. Of course, if *theoretical* pluralism is possible, and if different theories can be linked into different methodologies and methods, then *methodological* pluralism must be possible too. An argument for methodological pluralism is presented, and the emphasis is placed on the value of this in terms of optimising flexibility and responsiveness to stakeholder concerns during intervention. A review of intervention methods and methodologies is also provided.

Finally, **Section Three** of this book starts with some background to the author's own intervention *practice* in Community Operational Research (dealing with problematic issues in community contexts). Four examples of systemic intervention are provided, each of which is used to illustrate a different aspect of the methodology outlined in Section Two. The book then ends with an invitation to the reader to begin to practice systemic intervention and contribute to its further development.

This book can be ordered post-free directly from the publishers. Please send a cheque or your credit card details to Kluwer Academic Publishers, Distribution Centre, P. O. Box 322, 3300 AH Dordrecht, The Netherlands. Tel: +31 78 6392392. Fax: +31 78 6546474. E-mail: orderdept@wkap.nl

Collective Beings, Apogeo Scientifica, Milan, Italy". Minati G.

English version is expected to be published at the beginning of 2001: "Minati G., *Collective Beings*, Barnes and Noble.

The concepts of Systemics, Collective Phenomena and Emergence are presented as theoretical bases for understanding processes of Post-Industrial Society. These concepts allow to understand the crucial role - of Knowledge as primary resource, - of virtual corporations - and of ethics in the New Economy.

For further details please contact: Prof. Gianfranco Minati - ECONA, interuniversity Center, Univ. La Sapienza, Rome, Italy - AIRS, Italian Systems Research Society, Milano, Italy - Saybrook Institute, Consulting faculty, San Francisco, CA, USA

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**Information Systems Analysis and Modeling: An Informational Macrodynamics Approach
Vladimir S. Lerner**

Computer Science Dept., National University, Inglewood, CA, USA

Kluwer Academic Publishers, Boston, Hardbound, ISBN 0-7923-8683-3

November 1999, 336 pp. NLG 325.00 / USD 139.50 / GBP 96.50

THE KLUWER INTERNATIONAL SERIES IN ENGINEERING AND COMPUTER SCIENCE
Volume 532

Informational Macrodynamics (IMD) presents the unified information systemic approach with common information language for modeling, analysis and optimization of a variety of interactive processes, such as physical, biological, economical, social, and informational, including human activities.

Comparing it with thermodynamics, which deals with transformation energy and represents a theoretical foundation of physical technology, IMD deals with transformation information, and can be considered a theoretical foundation of Information Computer Technology (ICT). ICT includes but is not limited to applied computer science, computer information systems, computer and data communications, software engineering, and artificial intelligence. In ICT, information flows from different data sources, and interacts to create new information products. The information flows may interact physically or via their virtual connections, initiating an information dynamic process that can be distributed in space.

As in physics, a problem is understanding general regularities of the information processes in terms of information law, for the engineering and technological design, control, optimization, and development of computer technology, operations, manipulations, and management of real information objects.

Information Systems Analysis and Modeling: An Informational Macrodynamics Approach belongs to an interdisciplinary science that represents the new theoretical and computer-based methodology for system informational description and improvement, including various activities in such interdisciplinary areas as thinking, intelligent processes, management, and other nonphysical subjects with their mutual interactions, informational superimpositions, and the information transferred between interactions.

Information Systems Analysis and Modeling: An Informational Macrodynamics Approach can be used as a textbook or secondary text in courses on computer science, engineering, business, management, education, and psychology and as a reference for research and industry. Contents

Systems Approaches to Management

M.C. Jackson, University of Hull, UK

Kluwer Academic/Plenum Publishers

Hardbound, ISBN 0-306-46500-0 October 2000, 465 pp. NLG 165.00 / USD 69.50 / GBP 48.00

Paperback, ISBN 0-306-46506-X October 2000, 465 pp. NLG 75.00 / USD 32.50 / GBP 22.50

Systems Thinking is a new paradigm set to revolutionize management practice in the 21st century. Systems Approaches to Management is the most comprehensive guide available to the application of this new paradigm in the field of management. This book:

- Traces the emergence of holistic thinking in disciplines such as biology, control engineering, sociology and the natural sciences
- Details and provides a critique, based upon social theory, of the range of systems approaches, methodologies, models and methods
- Offers numerous case studies to illustrate systems thinking applied to management
- Introduces critical systems thinking' as a coherent framework that brings unity to the diversity of different systems approaches and advises managers, consultants, scholars and students on their use
- Provides an accessible source of inspiration for managers, management consultants, scholars and students
- Covers chaos and complexity theory, the learning organization, system dynamics, living systems theory, soft systems methodology, interactive management, interactive planning, total systems intervention, autopoiesis, management cybernetics, the viable system model, operations research (hard and soft), systems analysis, systems engineering, general system theory, sociotechnical systems thinking, the fifth discipline, social systems design, team synteegrity, postmodern systems thinking, critical systems thinking, and much more.
- Considers the work of Ackoff, Banathy, Beer, Capra, Checkland, Churchman, Eden, Emery, Flood, Forrester, Friend, Freire, Jackson, Jantsch, Linstone, Luhmann, Mason, Maturana, Miller, Mitroff, Prigogine, Rosenhead, Senge, Stacey, Trist, Ulrich, Varela, Vickers, von Bertalanffy, Warfield, Wheatley, Wiener, and many more.

NEWS

The Centre for Systems Studies at the University of Hull, Hull, UK, has a new Web Site. The URL is: <http://www.hull.ac.uk/hubs/css/>

A new issue of SYSTEMS PROSPECTS from the Centre for Systems Studies will soon be issued. If people would like to go on our mailing list to receive it free of charge they should send their postal address to Robert Clarke (r.clarke@admin.hull.ac.uk).

SECTION THREE

MEMBER'S BULLETIN BOARD

NOTICE OF MEETINGS

At the ASILOMAR, 2001, meeting the society gives notice that there will be the following membership forums:

**The Board of Directors meeting
The Board of Trustees meeting
The General AGM for the Society
The ISSS Council**

CALL FOR NOMINATIONS 2001

The following offices must be filled for terms beginning at the 2001 Annual Meeting of the Society:

This is a Call for Nominations for two ISSS leadership positions. The officers that must be elected for next year are President-elect and VP for Communications and Systems Education. Please submit any proposed candidates for these offices, along with a brief statement of credentials, to G.A. Swanson by January 30th. His e-mail address is: gaswanson@tntech.edu. He will be acting as my agent in this matter. The duties associated with each of these offices are described below in the relevant passages from the ISSS bylaws.

Thank you for your continued support of ISSS.
Peter Corning Past President

President-elect Section 4.6.3.2, VP Comm.& Sy Ed Section 4.6.3.8

President-Elect. The President-Elect shall become familiar with the duties of the office of President, make committee appointments in accordance with Section 4.8-4.8.6, and otherwise develop a plan of action for his/her term as President, and perform such other related duties as may be assigned by the President or designated by the Council and/or the Board of Directors. In the event of the President's failure to function (Section 4.13) or incapacitation, the President-Elect shall assume the duties of the President.

Vice-President for Communication and Systems Education. This officer shall serve as liaison to the Board of Directors for all Society-sponsored communication and education-related publication activities. In particular, this involves encouragement and facilitation of all kinds of communication and outreach activities, including (a) liaison and public relations activities with all other pertinent academic and

professional associations and groups, whether discipline-based or interdisciplinary, including the IFSR (International Federation for Systems Research) and the AAAS (American Association for the Advancement of Science); (b) publication of booklets, manuals, bibliographies, video and audio tapes, or simulation games describing or illuminating the value of systems and cybernetic concepts; (c) programs of school-based, government-agency-based, and industry-based activities or training seminars or workshops, alternate forms of discussion, either through Society chapter units or in any other feasible manner or site.

Vice President for Membership and Conferences

This is a Call for Nominations for a new Vice President for Membership and Conferences. Please submit any proposed candidates for this office, along with a brief statement of credentials, to G.A. Swanson by January 30th. His e-mail address is: gaswanson@tntech.edu. He will be acting as my agent in this matter. The duties associated with this office are described below in the relevant passage from the ISSS Bylaws.

Peter Corning Past President

Section 4.6.3.9

Vice President for Membership and Conferences. The VP for Membership and Conferences serves as liaison to the Board of Directors for diligent promotion of membership and conferences, including but not limited to the annual meeting of the Society, chapter, SIG, and staff meetings, and joint conferences with other organizations. Diligent promotion activity includes active use of expertise in reaching all promising media of communication for publishing news of Society meetings and spreading word of informal professional collaborative activities. In addition, this officer should be a facilitator who works with the annual meeting organizers selected by the President.

THANK YOU FROM G. A. SWANSON

It is now four and a half years since Kenneth Bailey came to me at the ISSS Annual Meeting in Louisville, Kentucky, and asked me to accept a nomination for President-elect. I talked to Linda Peeno, who had agreed to extend her term as Vice-president and Managing Director, and we agreed that we would work together to rebuild the organization that had dwindled over the last several years, if I were elected. I was elected and the organization has been revitalized.

During the first year, I traveled around the world, visiting various systems scientists and philosophers in an attempt to determine the state of the systems movement — where its strengths were and where it was most strongly associated with ISSS. I determined that there were two centers of influence and several individuals scattered around the world that could form the foundation for a renaissance. The two centers were the associates of Bela H. and Bela A. Banathy and those associated with M. C. (Mike) Jackson. Both of these associations have become strongly involved in the resurgence of ISSS. Bela A. Banathy is the new VP for Administration and Mike Jackson is the President-elect.

Several individuals were critically important in building what we have today. Yong Pil Rhee took full financial and organizational responsibility for the 1997 Annual Meeting in Seoul, Korea, and provided the funds to jump-start the office in Cookeville when the Board was informed that all ISSS funds had been depleted at Louisville. Janet Allen took on the bulk of the responsibility for the 1998 Annual Meeting in Atlanta, Georgia, and continued to work with Jennifer Wilby to standardize and improve the quality of later Proceedings of the Annual Meeting. Bela A. Banathy took full responsibility for the 1999 Annual Meeting at Asilomar, California, and agreed to serve as VP for Administration when his health improved. Harold Linstone persuaded former Presidents of ISSS to back our efforts. I relied heavily on the systems knowledge of Charles Francois on questions of the systems discipline and its development. Tom Mandel provided the lions share of electronic information support initially and has continued to be the point man in that surging service to ISSS members and, indeed, to the systems movement. And, the recent momentous undertaking of the ISSS2000/World Congress of the Systems Sciences by Peter Corning have all brought ISSS into the twenty-first century.

While ISSS would not be what it is today without each of those contributions mentioned above, one person's contribution extends throughout these four-and-a half years and, indeed, began long before. That person is Jennifer Wilby. If Jennifer had given up at any time, it is unlikely that I would have continued. She understood the systems movement from within. Her assistance in reaching critical individuals, her advice, her tireless work for publications and annual meetings, and her publications skills were always there, undergirding every forward move. I sense that those who have been members of ISSS for some time realize her indispensable contribution but I have been privileged to experience the extent of that contribution. Thank you, Jennifer!

Although I have mentioned some critical contributions to the recent successes of ISSS, we obviously would not be where we are without all ISSS members who have been inspired by the grand possibilities of systems science, philosophy, and thinking. I wish I could name all who have contributed to ISSS in the last few years and have touched my life personally but, inevitably, I would leave out someone important. Thank you for taking "it to the limit, one more time". Whether justified or not, I believe you did it to some degree for me. Thank you and Best Wishes...GA

**ISSS
2001-2002 Plan of Action**

**Michael C. Jackson
President**

Goals

During my time as President-Elect and in my Presidential year, I shall be seeking to achieve the following:-

1. Ensuring that ISSS remains on a sound financial and administrative footing. The groundwork has been done by G.A. Swanson, to whom the Society owes much. I am sure that it will be continued by the new Administrative Director, Bela A. Banathy.
2. Ensuring that ISSS plays a leading role in the growth of the systems movement. Over the past few years, ISSS has regained some of the ground lost as the leading professional society in the field of systems thinking and the systems sciences. As the systems movement grows there is a need for ISSS to reaffirm the central role it plays.
3. Ensuring that the journal of ISSS, Systems Research and Behavioral Science, reflects the interests and ambitions of the ISSS's membership. This is both international and drawn from all parts of the systems thinking tradition - theoreticians and practitioners who take a systems viewpoint in very diverse fields of activity.
4. Ensuring the success of the 2002 ISSS Conference in Shanghai, China. The theme for this conference is to be announced soon. Organising committees have already been formed in the UK and in China to begin the preparations for this meeting.
5. Confirm and work with established ISSS committees and commissions to further the goals of the Society.

COMMITTEES AND COMMISSIONS

Bylaw Authorized Committees

Nominating Committee

Purpose: To make nominations for the office of President-Elect, VP for Administration, Secretary and VP for Protocol, Treasurer and VP for Funds, VP for Research and Publications, and VP for Communication and Systems Education.

Responsibility: To solicit and consider officer nominee recommendations by the general membership and to publish nominations to the membership at least forty-five days prior to the scheduled annual election according to sections 4.11.1-2 of the bylaws.

Members:	-Past President Harold Nelson (chair)	-open
	-VP for Administration Bela Banathy,	-open
	-Harold Linstone	-open

Finance Committee

Purpose: To lead in the development of financial management policies.

Responsibility: To raise money, advise the Treasurer and VP for Funds in the investment of Society funds, advise the VP for Administration on preparation of the proposed annual budget to be adopted by the Board of Directors, and provide general supervision of the financial affairs of the society.

Members: -Donald de Raadt -Harold Linstone (Chair)
 -Dan Duncan -Farrokh Mistree
 -Martin L. W. Hall -Yong Pil Rhee
 -Brian Hilton -Lynn Jenks (Treasurer)

Bylaws Committee

Purpose: To coordinate maintenance and revision of the corporate bylaws to facilitate the purposes of the Society.

Responsibility: To review proposals for changes in the bylaws, submit to the Council its recommendations concerning proposals, for changes in the bylaws, be responsible for submitting proposed bylaw changes to the membership in accordance with Article VII, and review and submit recommendations concerning chapter and SIG bylaws for consideration by the Board of Directors.

Members: -Bela H. Banathy -Carl Slawski (chair)
 -John Dillon -Lane Tracy

Publications Committee

Purpose: undefined

Responsibilities: undefined

Members: -Chair – Jennifer Wilby
 -Complexity Editor John Casti
 -General Systems Bulletin Editor Jennifer Wilby
 -Intl. Journal of General Systems George J. Klir
 -ISSS Yearbook Editor Jennifer Wilby
 -Journal of Biological Systems Editor Pierre Auger
 -Systems Editor M. (Mike) Bazewicz
 -Systemic Practice and Action Research R. L. Flood
 -Systems Research and Behavioral Science Mike Jackson
 -Technological Forecasting & Social Change Harold A. Linstone
 -Peter Corning
 -Charles Francois
 -Martin L. W. Hall

Educational Programs and Materials Committee

Purpose: Undefined

Responsibilities: undefined

Members:	-Janet Allen	-Enrique Herrscher
	-T.F.H. (Tim) Allen	-Christopher Jeffery
	-H. S. Bhola (chair)	-Tom Mandel
	-Helmut Burkhardt	-Gianfranco Minati
	-Arne R. Collen	-L. Carlson - Sabelli
	-Heihki Heiskanen	

President Commissions

Systems Educational Programs and Materials

Purpose: To propagate systems-based courses and materials to other institutions and the development of systems programs.

Responsibilities:

1. Define the purpose and responsibilities of the Society's Educational Programs and Materials Committee.
2. Identify systems-based courses, textbooks, and other teaching materials; institutions amicable to the introduction of systems-based courses, the key movers in the promotion of courses of general science, integrative type programs that could benefit from systems thinking , and accrediting associations that require cross-discipline integrative experiences in the curriculum, and instructing systems education and research programs.
3. To develop means of facilitating the publication and transfer of system-based educational materials including Internet publishing.

Members:	-Janet Allen	-Enrique Herrscher
	-T.F.H. (Tim) Allen (co-chair)	-Heikki Heiskanen
	-Kenneth Bailey	-Ray Ison
	-Bela A. Banathy	-George Klir
	-H.S. Bhola	-James Miller
	-Mandy Brown	-Jessie Miller
	-Helmut Burkhardt	-Howard Odum
	-Peter Corning	-Carl Slawski
	-Dan Duncan	-Len Troncale
	-Charles Francois (co-chair)	-Peter Winiwarter
	-Martin L. W. Hall	

Publications

Purpose: The Commission of Publications will consist of the Publications Committee and others interested editor members of systems-related publications. It will (1) define the purpose and responsibilities of the Society's Publication Committee and (2) develop a plan for associating systems-based publications with the Society.

Chapters and Meetings

Purpose: To develop and implement a plan for continuing chapter meetings.

Responsibilities:

1. To specify in detail at least three model plans for regular meetings of the chapters at institutional, community, and societal levels.
2. To implement successfully at least two programs at each level.

Members:

-M. (Mike) Bazewicz	-Gianfranco Minati
-Helmut (Ken) Burkhardt	-Alfred Roessle
-Nagib C. Callaos	-Daniel Radell
-Donald de Raadt	-Axel Randrup
-Kevin Doyle	-Yong Pil Rhee
-Charles Francois	-Kjell Samuelson
-Tor Guimaraes	-Carl Slawski (co-chair)
-William Hutchinson (co-chair)	
- Tetsunori Koizumi	-Sytse Strijbos
-Steven C. Merker	-B. Subramanian

Cooperation with Other Organizations

Purpose: To develop and implement a plan for cooperation among the ISSS and other professional organizations.

Responsibilities:

1. To develop a statement on why other professional organizations and the ISSS should enter into formal agreements of cooperation.
2. Develop a list of specific terms that might be included in such formal agreements.
3. Develop a brochure to promote initial contacts with other organizations.
4. Develop video and computer presentations to promote organizational cooperation.

Members:

-Bela H. Banathy	-Dan Radell
-C. W. Churchman	-Yong Pil Rhee
-Dan Duncan (co-chair)	-Hector Sabelli
-Inga Krattli (co-chair)	-Denise Schmandt-Besserat
-Farrokh Mistree	-Bill Shireman (co-chair)
-Howard Odum	-Lane Tracy
-Len Troncale	

**2000 ISSS FINANCIAL REPORTS
SUBMITTED BY ROBERT C. ELMORE
NOVEMBER 1, 2000**

BEGINNING BALANCE: JANUARY 1, 2000		\$22,904.22
JANUARY 2000 RECEIPTS:		
CHECKS:	\$2,530.00	
CREDIT CARDS:	3,145.00	
		<u>+5,675.00</u>
		\$28,579.22
LESS:		
FEES:	\$ 18.00	
CHECKS	<u>\$3,402.51</u>	
		<u>\$-3,420.51</u>
BALANCE: FEBRUARY 1, 2000		\$25,158.71
FEBRUARY 2000 RECEIPTS:		
CHECKS:	\$4,465.00	
CREDIT CARDS:	2,267.00	
		<u>+\$6,732.00</u>
		\$31,890.71
LESS:		
FEES:	\$ 127.66	
CHECKS	<u>\$ 483.28</u>	
		\$-610.94
BALANCE: MARCH 1, 2000		\$31,279.77
MARCH 2000 RECEIPTS:		
CHECKS:	\$2,310.00	
CREDIT CARDS:	2,390.00	
		<u>+ 4,700.00</u>
		\$35,279.77
LESS:		
FEES:	\$ 97.58	
CHECKS	<u>\$9788.55</u>	
		<u>\$ -9,886.13</u>
BALANCE: APRIL 1, 2000		\$26,093.64
APRIL 2000 RECEIPTS:		
CHECKS:	\$1,505.00	
CREDIT CARDS:	1,005.00	
DEPOSITS		<u>+2,510.00</u>
		\$28,603.64
LESS:		
FEES:	\$ 102.03	
CHECKS	<u>\$ 3,505.30</u>	
		<u>\$- 3,607.33</u>
BALANCE: MAY 1, 2000		\$24,996.31

MAY 2000 RECEIPTS:		
CHECKS:	\$1,770.00	
CREDIT CARDS:		752.00
		<u>2,522.00</u>
LESS:		
FEEs:	\$ 63.65	
CHECKS	<u>\$ 2,223.44</u>	
		<u>\$-2,287.09</u>
BALANCE: JUNE 1, 2000		\$25,230.92
JUNE 2000 RECEIPTS		
CHECKS:	\$ 260.00	
CREDIT CARDS:	535.00	
		<u>795.00</u>
		\$26,025.92
LESS:		
FEEs:	\$ 44.43	
CHECKS	<u>\$ 1,360.00</u>	
		<u>-\$1,404.43</u>
BALANCE: JULY 1, 2000		\$24,621.49
JULY 2000 RECEIPTS		
BANK CARD	\$ 200.00	
		<u>+200.00</u>
		\$24,821.49
LESS:		
FEEs:	32.85	
CHECKS	<u>\$ 581.00</u>	
		<u>-\$613.85</u>
BALANCE: AUG 1, 2000		\$24,207.64
JULY 2000 RECEIPTS		
CHECKS:	\$ 26,531.51	
		<u>26,531.51</u>
		\$50,731.65
LESS:		
FEEs:	\$ 6.50	
CHECKS	<u>\$ 15.00</u>	
		<u>-\$21.50</u>
BALANCE: SEPT. 1, 2000		\$50,723.65
SEPT. 2000 RECEIPTS		
BANK CARD	\$ 0.00	
		<u>+ 0.00</u>
		\$50,723.65
LESS:		
FEEs:	\$ 15.00	
		\$ 15.00
BALANCE: OCT. 1, 2000		\$50,708.65

OCT. 2000 RECEIPTS

CHECKS \$395.00
 BANKCARD 350.00

+745.00
\$51,453.65

LESS:
 FEES: \$ 15.00

-\$15.00
 \$51,438.65

BALANCE: NOV. 1 2000

CHECKS:

24-Jan	DEPOSIT-CONVENTION	1125	3402.51
4-Feb	NETWORK SOLUTIONS	1126	35
9-Feb	ANGELA FLATT SUPPLIES	1128	16.28
28-Feb	PLENUM PUB. CO.	1127	432
1-Mar	JOHN WILEY	1130	1190
10-Mar	TTU DONATION	1131	2000
14-Mar	TTU SUPPLIES	1134	236.55
15-Mar	JOHN WILEY	1132	4375
15-Mar	PLENUM PUB. CO.	1133	1987
10-Apr	TN SEC. OF STATE	1136	20
10-Apr	PLENUM PUB. CO.	1138	615
12-Apr	JOHN WILEY	1137	1430
12-Apr	IFSR MEMBERSHIP FEES	1135	200
12-Apr	TTU-RRC-SUPPLIES	1140	500.3
24-Apr	JOHN WILEY	1141	490
26-Apr	PLENUM PUB. CO.	1142	250
1-May	JOHN ORG.-REFUND	1139	70
3-May	JOHN WILEY	1143	40
8-May	PLENUM PUB. CO.	1144	30
10-May	JOHN WILEY	1145	650
22-May	PLENUM PUB. CO.	1146	385
31-May	TTU-RRC-SUPPLIES	1149	1048.74
24-May	JOHN WILEY	1147	360
25-May	PLENUM PUB. CO.	1148	110
5-Jun	JOHN WILEY	1150	890
28-Jun	PLENUM PUB. CO.	1151	55
28-Jun	JOHN WILEY	1152	160
29-Jun	PLENUM PUB. CO.	1153	55
14-Jul	G.A. SWANSON	1154	311

OUTSTANDING CHECKS: NOVEMBER 1

23-Oct	JOHN WILEY	1155	250
23-Oct	PLENUM PUB. CO.	1156	140
2-Nov	TTU-RRC	1157	259.9
2-Nov	Pinehurst Tech Inc.	1158	523.19

New business: Item 1: MSP (7 for, ^0 ^0) — ISSS 2000 budget motion (in two parts):

- A. That a new restricted account be opened for the publication of the General Systems Bulletin. That \$1,500- from the Board's discretionary account, the balance of which was \$3,995 as of 12/31/99, be moved to the Bulletin account, and that from 1/1/2000 onward the first \$1,500 received from memberships above the amount allocated to the General Office account be put into the Bulletin account with the residual going into the Board's discretionary account.
- B. That the annual membership dues be increased by \$10- for regular and retired membership classes and \$50- for institutional membership.

Explanation: This increase will provide the following membership fee structure: Regular — \$95-; Retired — \$80-; Developing Country — \$70-; Student — \$55-; and Institutional — \$390-.

Furthermore, that all of the receipts from this increase be placed in a special account to be dispersed by the Board of Directors for electronic infrastructure related expenses including systems science bibliography and document data bases. Only in Board-documented emergencies should funds from this account be used for other purposes.

Item 2: MSP approval (7 for, ^0 ^0) of Financial Report as of June 30, 2000. [See attached handwritten copy indicating a balance of \$22,078.90, with accounts receivable from ISSS 2000 of \$3,402.51.]

Item 3: Current developments — general discussion without any item of business. Consideration was given to the plans for the South Africa meeting in 2001, for 2001 in either Asilomar or Shanghai, with Bulgaria and Canada as other possibilities.

Adjourned at 1:17 p.m.

These minutes have not yet been approved.

Respectfully submitted by incoming Secretary and VP for Protocol, Carl Slawski

**Minutes of ISSS Council
Toronto, Ryerson Polytechnic Room 372**

Present SIG Chairs, Chapter Chairs, Board of Directors and Trustees: Harold Nelson, G. A. Swanson, Mike Jackson, Janet Allen, Enrique Herrscher, Stuart Umpleby, Axel Randrup, Vitaly Dubrovsky, Dennis Finlayson. Guests/Observers: Anne Nelson, Parviz Ahari, Ken Bausch, Stuart Umpleby.

Called to order by meeting chair G. A. Swanson at 8:31 a.m.

Announcement: Current net stream is being sent to Peru, Bulgaria, and Hull, UK.

New Business:

Item #1: The Council and SIG Chairs appreciate the work of Tom Mandel, particularly on the ISSS web site.

Item #2: Ratification of Board of Directors, two part budgetary motion, A & B. Motion passed unanimously.

**Minutes of Membership Meeting
Toronto, Ryerson Polytechnic Room 372**

Called to order at 11:36 a.m. by meeting chair, G. A. Swanson.

Present: 31 members.

New business: Ratify motion on dues increase of the Council (item 2A of the Council, and previously item 1B of the Board or Directors). The vote was 31 for, -0, -0).

The items of official business were completed at 11:44 a.m.

Harold Nelson, President Elect gave a preview of the upcoming meeting plans for South Africa in 2001, noting his planned themes relating to leadership and service, congruence of theory and action.

The meeting was adjourned at noon.

These minutes have not yet been approved.

Respectfully submitted by Carl Slawski, Secretary.

