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SECTION ONE
EDITORIALS, PAPERS AND CORRESPONDENCE

INCOMING PRESIDENTIAL ADDRESS
Cancun July 2005

Whither Systems?
¿A Dónde Vamos?
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Abstract

The question I ask in the title, subtitled in recognition of our Mexican hosts, pertains to both the broadly defined field of systems thinking in general and to the ISSS in particular. Specifically, I will explore what systems thinking might have to contribute to the challenges facing humanity at this juncture in our evolution, as well as the role that ISSS might play in fostering more systemic approaches in education, business, technology, and government. At an even broader level, in order to provide a context for these questions, it is important to consider where the systems that condition our lives are themselves headed. There are many indications that the current state of the world is highly unstable – whether one considers ecological issues, such as the loss of biodiversity and climate change, or sociopolitical issues, such as the increasing disparity in wealth, heightened tensions between nations, or the threat of nuclear proliferation. In what ways might the various traditions that comprise the "systems approach" contribute to resolving the increasing polarization between individuals, belief systems, and living conditions in different parts of the world? Even within the broad umbrella of systems thinking, there seems to be a growing divide between the "two cultures" (i.e. science and the humanities) that C.P. Snow (1959) identified nearly a half century ago. One of the primary goals for which the ISSS was founded was to foster the unity of knowledge, which is perhaps what makes it unique among the many systems-oriented institutions that have emerged in the interim. How might we most effectively pursue this quest and what might it mean in the context of our times?

Introduction

It is an honor to have been chosen as your president, particularly because, as Jennifer Wilby informed me when she asked if I would accept the nomination for this position, I am only the second woman president in the history of the society, the first being Margaret Mead (1972-73). I believe in the mission of ISSS and will work hard during the coming years to further that mission. Next year's conference will be the 50th annual meeting — a significant milestone. It is important to celebrate and acknowledge the contributions of all of those who have made the society what it is, and at the same time to highlight developments in other branches of systems thinking.[1]

As part of my preparation for next summer's conference, I spent the month of June 2005 at the Santa Fe Institute's Complex Systems Summer School, learning about the field of complex systems studies. One of my primary goals for next year's meeting is to bring in different perspectives from a variety of systems-related organizations, such as the Santa Fe Institute, the American Society for Cybernetics, and the System Dynamics Group among others. Despite their differences in orientation and approach, these various organizations share a number of goals in common, and I believe it is important to build bridges with different organizations instead of perpetuating the same kind of fragmentation of knowledge that the founders of ISSS were hoping to overcome. The challenges

that we face in the world today require collaboration, cooperation, mutual understanding, openness, tolerance, and as Kenneth Boulding would say, "a willingness to see the other fellow's point of view."

Where ARE We Going?

I was in a somewhat whimsical mood when Jennifer asked for title of my talk. I chose "Whither systems?" because it seemed to capture the sense of what I hoped to discuss. Webster gives the following definition for whither: "to what place, result, or condition," which reflects the kind of questions I would like to pose to ISSS and to the systems movement in general. The image I chose to illustrate the title of my talk captured for me a small segment of the Lorenz attractor, showing the trajectory of separate paths converging and diverging. It gave me the sense of skimming along the edge of a chaotic attractor, and that chaotic attractor might be concept of systems. And the Lorenz attractor provides an appropriate visual metaphor, with its two somewhat skewed planes, which might be seen as representing the analytical and hermeneutic dimensions of systems thinking, or alternatively, perhaps, the thermodynamic and linguistic dimensions that Tim Allen so vividly demonstrated in his presentation.

In honor of our Mexican hosts, and representatives from the Latin American Systems Society (ALAS), I chose to subtitle my talk "¿A Dónde Vamos?" — where are we going? – asking this question on three levels: Where are we going as a society, as a field of systems science, and as a whole planetary ecosystem? I will address these levels in reverse order, because the way we understand what we're facing as a planetary ecosystem should determine the direction of system science in general and ISSS in particular.

Ralph Gerard, who was one of the founders of this society, often referred to scientists as the brain of the social organism, depicting science as a kind of guidance system. Although the organismic analogy may be problematic, science does indeed help us understand the world around us in order to act more effectively in that world. Systems science emerged in part to address the increasing specialization of science and the resulting fragmentation of our collective understanding, offering an approach that integrates knowledge from the physical sciences, life sciences, and social sciences, as well as ethics, aesthetics, and spirituality.

Russell Ackoff identified three main kinds of systems: technological systems, social systems, and biological systems. Ludwig von Bertalanffy, recognized as the founder of General System Theory, said that human beings are biological organisms, but we live in world of symbols, and then suggested that it is the symbolic dimension of our lives that is at the root of most of our problems. He argued that wars are symbolic conflicts, not necessarily biological conflicts. While economics clearly plays an important role in contemporary conflicts, it would be an interesting project to try to tease apart the symbolic and biological dimensions of our economic sphere, particularly as the neo-Darwinian framework is often evoked to justify the increasing disparity in the human condition.

What is Science For?

This question was posed to me by one of the students at the Santa Fe Institute's Summer School, in response to what seemed to her to be a distortion of priorities in much contemporary research and investigation. It has always seemed to me that the primary purpose of science should be to work in service of humanity, to improve the human condition, and to preserve the integrity of the natural world, although the various institutional constraints within which contemporary science functions often serve other, occasionally conflicting aims.

In addressing the question of the purpose of science, it is important to consider the difference in orientation between theoretical and applied sciences. The primary criterion of value in theoretical science is the discovery of truth, and yet even the kinds of truths that are considered important have to be seen in the context of social, economic, and political factors. Even more significant, in relation to my topic, are the ways in which science is being applied; it is important to ask whose interests are being served, particularly in terms of the balance between public and private good.

Where are we Headed as a Planetary Ecosystem?

Beginning, then, with the planetary ecosystem, what are the trends and what are the challenges that we face? How we answer these questions might help to illuminate the directions that systems science and ISSS might want to pursue. In his plenary address, "Service Sciences, Engineering, and Management (SSEM): An Emerging Multidiscipline," Jim Spohrer identified the emerging service economy as an important trend, and spoke of the challenges of adapting to the rapidly changing dynamics in the socio-technical systems that shape our lives. At the same time, it is necessary to place these considerations in the context of what I see as two critical overarching trends: the increasing disparity between rich and poor, and the increasing worldwide acceleration of environmental degradation.

In that context, I believe that the most critical challenge facing humanity is how to create a more sustainable future. Many have commented that sustainability has become a meaningless term, because it is used by so many to mean so many different things. Nevertheless, the generally accepted definition – meeting the needs of the present without compromising the ability of future generations to meet their own needs – provides a starting point for evaluating our choices, which highlights the critical dimensions of social justice and conflict resolution.

Where is the Field of Systems Science Headed?

With that as the context for the planet, where is the field of systems science going? When I first began my research on the history of systems thinking (see Hammond, *The Science of Synthesis: Exploring the Social Implications of General Systems Theory*), I struggled to get a handle on what exactly systems theory was all about and what was the relationship between the many and varied schools of thought in that broadly conceived field. At the time, I created the following framework for thinking about the different strands of systems thinking (see Table 1). Clearly there is a lot of crossover and interrelationship between these various approaches, but this categorization helped me to identify differences in goals and general orientations.

Table 1: *Schools of Thought/Practice in the Systems Field*

Problem Solving	Modeling	Synthesis/Integration	New Paradigm
Systems Engineering	System Dynamics	Cybernetics	Deep Ecology
Systems Analysis	Systems Ecology	General System(s) Theory	Change in Consciousness
	Dynamical Systems		
	Chaos/Complexity		

Some of the earliest developments in the field of systems – systems engineering and systems analysis – were focused on basic problem solving in technological and organizational systems. With the evolution of more sophisticated computer technology came the ability to model the dynamics of complex systems in connection with such fields as system dynamics and the more recent fields of chaos and complexity studies. These fields tend to emphasize the mathematical and theoretical dimension of systems thinking.

Building upon the more technical orientation of the first two categories, the fields of cybernetics and general system(s) theory emerged as broader fields concerned with integration and synthesis, bringing together a wide range of disciplinary perspectives in exploring larger questions. And the final category of new paradigm thinking recognizes the significant influence of systems thinking in the emergence of deep ecology and related fields, which draw on system concepts to highlight the importance of relationship and interdependence, and the need for a change in consciousness, particularly in terms of our sense of identity in relation to the larger world of which we are a part, if we're going to move to a more sustainable culture.

Recently I put together a book proposal, with the intention of exploring how has the field of systems science has evolved in the last fifty years and the following list of emerging fields reflects the general directions that I identified:

- Systems Practice
- Participatory Systems Design
- Self-Organizing Systems
- Second Order Cybernetics
- Systems Biology
- Ecology & Sustainability
- Complexity Studies

The first three of these are the ones I see as being most well represented in ISSS. Systems practice is reflected in the work of such influential systems thinkers as Russell Ackoff, C. West Churchman, Peter Checkland, and Mike Jackson, all of whom have worked with organizations to bring about change through more collaborative processes. Closely related is the kind of work that Bela Banathy and many of his students have been doing in participatory systems design. These are the areas that have been most interesting to me throughout my association with ISSS, and they are part of the much larger category of self-organizing systems – exploring the processes of self-organization in a variety of complex systems, but especially complex human socio-technical systems. An important contribution in this endeavor has been the emergence and development of second order cybernetics, which focuses not only on understanding feedback processes in physical systems, but exploring the processes of self-reflective feedback and learning in living systems.

The last three fields are probably least well represented in ISSS, and they represent areas for future outreach. Systems biology is a key area in the systems field that is re-surfacing, as we understand the dynamics of the genome and interactions among the genes. As Len Troncale has often suggested, this is a field that is currently experiencing a renaissance. Ecology and sustainability are inherently systemic fields that could be more fully integrated into the work of the society. And the field of complexity studies, which includes such topics as nonlinear chaotic dynamics, network theory, and agent-based modeling, is furthering an important part of what the ISSS was originally founded to do.

What about ISSS: Where are we Headed as a Society?

What role can we play and what is unique about what we have to offer? Before I answer that question, I wanted to reflect on the kinds of research that is represented in our membership. Drawing from the list of active Special Integration Groups (SIGs) and the general focus of papers that I have experienced in the twelve years that I've been part of the society, these are the areas of research that I identified as being most active in ISSS.

Management is a key area, closely related to informatics and information science. Another cluster involves concerns with organizational change, social system design, and education. Living systems, building on the work of James Grier Miller, has been a significant field within the ISSS community, although it has tended to be somewhat isolated from other developments. Although less represented at this meeting, psychology has been an important area in the past, along with such related fields as cognitive science, consciousness studies, and second order cybernetics. And lastly, probably most closely related to the founding aims of the society, are efforts toward the development of meta-theoretical frameworks and general systems theories. The clusters, as I have drawn them, reflect the fact that work in these areas is not always connected. And I think that's one of the challenges for ISSS – to find ways to integrate the work being done in the various SIGs or the various sub-clusters of general systems thinking. I appreciate the work that the Student SIG has done this year in this regard, documenting the work of the various SIGS and seeking to articulate some of the connections.

Culture Wars and the Unity of Knowledge

One of the initial aims of the society, when it was first organized in 1954, was to foster the unity of science by bringing together scholars from different disciplinary fields, to share their insights and see what they could learn from each other. This orientation toward the unity of knowledge is one of the features that makes ISSS unique among systems-oriented institutions, and it is perhaps the most important contribution that we offer in this field – because we do try to bring different perspectives together. So the question remains whether or not this is a meaningful pursuit in the context of our times, and if so how we might most effectively pursue such a quest. Personally, I see it as an important challenge, not only for ISSS, but for the world as a whole.

In August 2004, the new Provost at Sonoma State University, where I teach, sent out on our campus listserv an article by Vartan Gregorian entitled, "Colleges Must Reconstruct the Unity of Knowledge." Gregorian wrote about the fragmentation of knowledge and the problems of increasing specialization, and then suggested that in order to find meaning and to understand their role in society, students need to develop skills in synthesis and systemic thinking. He went on to say that while we have enormous amounts of information and computer systems to help us integrate it, that information alone can't help us come up with a coherent moral framework or tell us what questions are really worth asking.

What intrigued me was the vehemence of the response to this article. There was enormous resistance from several faculty members to this notion of the unity of knowledge. One person wrote about the "facility with which generalization and synthesis lead to fallacy." Another person wrote that, "knowledge is historically contingent, socially constructed, and deeply contested." And another: "At the end of his piece, Gregorian paraphrases T.S. Eliot on Dante's Inferno that 'hell is a place where nothing connects with nothing.' OK, but I would add that hell may also be a standardized world in which everything is unified into conveniently packaged and packageable wholes."

In response, the Provost wrote, "I see in this call for unity a turn back from a post-modernist fragmentation of meaning, a reaffirmation of the possibility of progress in knowledge and, finally, of progress in the human experience." To which, another faculty member responded: "Calls for a unity of knowledge, or 'consilience,' can indeed directly conflict with what is broadly called postmodernism. However, rather than regarding postmodernism primarily as fragmentation, we might also see it more positively as a *democratization* of discourses and an opening to perspectives heretofore marginalized by monopolistic [and as another writer added, interest dependent] claims to 'the Truth.' I cannot believe that in our globalized multicultural world we can ever go back to any unitary absolutism (unless we surrender to some variety of fundamentalism)."

There is clearly some confusion about what is meant by idea of the unity of knowledge. What ISSS offers is a place where we can bring in multiple perspectives and share our ideas with one another. There is clearly reason for concern about the potential tendency, in pursuit of the "unity of knowledge," toward a kind of disciplinary and/or theoretical imperialism. I heard this at Santa Fe Institute, toward the end of the summer school, from a faculty panel, who said that you can't do complex systems studies unless you know differential equations and linear algebra. Similarly, E.O. Wilson, in his book, *Consilience: The Unity of Knowledge*, proposed an integration of the natural and social sciences using evolutionary theory as the overarching framework. What ISSS offers, in contrast, is an opportunity for bringing multiple voices together without trying to fit them into one single framework – the kind of democratization of discourses mentioned above. I believe this is a tremendously valuable contribution toward addressing the critical issues of our times, as we will never be able to solve the problems we face, if we are unable to talk to each other across the divides that have traditionally kept us from understanding – and working together with – one another.

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Remembering the Cancun Meeting

Past-President Enrique G. Herrscher wishes to thank all participants, the Mexican Committee, the Advisory Committee, Lezlie Kinyon and particularly Gary Metcalf for making the 49th Annual Meeting a success.

Nine highlights mark, in my opinion, that success:

* the six plenary lectures

* the discussion by groups after some of the plenaries

* the discussion and interactive paper presentations at the SIG sessions

* the active participation of the Youth group chaired by Nicholas Magliocca

* the massive participation from Latin American countries, with numerous excellent papers

* the joint pre-conference activities with the Mexican Systems Society

* the post-conference workshop on Syntegrity conducted by Allena Leonard

* the dialogue climate among all the different approaches

* last but not least: the five days conversations with Russell Ackoff

Hope to see you all at Sonoma next July. Best wishes to all.

Enrique G. Herrscher

On Aristotle's Conception of Causality
S.N. Salthe

I here present a diagrammatic meditation on the Four Causes. In complex systems, causality cannot be restricted (as in physics) solely to efficient cause or (as in chemistry and biology) only to material causes.

As it happens, formal cause has been utilized in all the sciences (although unmarked as such) in formal models and equations. Final cause, however, has been explicitly barred from science discourse — and yet, not entirely. It could be argued that variational principles such as, in thermodynamics, physical entropy, or in evolutionary biology, population fitness — since whatever happens they must increase — are really finalities. As for entropy, it has been demonstrated that work in natural systems is at best only about 50% energy efficient, and so any work performed could justly be viewed as occurring 'in order to' produce entropy — which is to say that it is entrained by the Second Law of thermodynamics. With fitness, if that does not increase, a population or genotype will inevitably go extinct, and could not figure in the evolution epic. And so all existing populations have been entrained by the finality of fitness increase. I submit that systems scientists ought to consider all of Aristotle's Four.

In the diagram I interpret the four causes from both a semiotic and a hierarchy theory perspective. Semiotically, Charles Peirce's philosophical categories are: First is that which exits, as such, in itself as a particular, now; Second is existence in relation to other existents — including interaction; Third is generality, accumulating record and framework, projecting a future.

The specification hierarchy, here in set theoretic representation, models intensional complexity — the fact that complex systems can be analyzed from more than one perspective. A standard analysis of a material system from this viewpoint might be: {physical process {chemical particulars {biological form {sociopolitical projects}}}}. The Scale hierarchy models extensional complexity, as found in systems of nested wholes and parts, as in [biome [population [organism [macromolecule]]]]. Any dynamics occurring at some level will be made possible by potentials generated at the next lower level, and will be entrained, regulated or harnessed by boundary conditions imposed by the next upper level.

Living Systems Theory and the Emergence of Immigrant Enclaves

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Numerous theoretical approaches have attempted to explain the frequently observed geographical concentration of migrants from one source region in one place of destination (e.g., Chiswick and Miller, 2002). Even though large sets of potential destinations may exist, migration is often channeled to a very limited number of places where migrants' networks have already been established, thereby producing the immigrant enclaves.

We attempt to approach this problem by analyzing migration in terms of the Living Systems Theory (LST). LST (Miller, 1978; Miller and Miller, 1995) regards each living system (LS) as being comprised of twenty subsystems. Two of these subsystems process both matter/energy and information: (1) reproducer and (2) boundary. Eight subsystems process matter/energy only: (3) ingestor, (4) distributor, (5) converter, (6) producer, (7) matter/energy storage, (8) extruder, (9) motor, and (10) supporter. The last ten subsystems process information only. These are (11) input transducer, (12) internal transducer, (13) channel and net, (14) timer, (15) decoder, (16) associator, (17) memory, (18) decider, (19) encoder, and (20) output transducer. These twenty subsystems are considered at eight levels: cell, organ, organism, group, organization, community, society, and supranational system.

The answer to the question of why migration streams usually develop in several definite directions and eventually produce immigrant enclaves lies in the nature of the migration of living systems. Let us consider migration as a movement of living systems. LS may migrate at each level—from cell to society. When cells are organized in human organisms and those are organized in LS of higher levels—groups, communities, etc.—we speak of human migrations. Migration streams move matter and information among different living systems or among different parts of one living system. We may classify migration streams according to the subsystem(s) that generate migration movements. Below we use LST to describe two types of migrations.

Reproducer-type (R-type). "Reproducer" is the subsystem that is capable of generating other systems similar to the one in which it resides. R-type migration is a migration flow that aims to create a new living system that resembles its parental living system in some other place. The establishment of a new town is an example of R-type migration.

Extruder-Ingestor (E-I–type). "Extruder" is the subsystem that transmits matter/energy out of the system. "Ingestor" is the subsystem that brings matter/energy across the system boundary from the environment. A migration flow that transfers lower-level living systems to a different and higher-level living system is an extruder-ingestor type of migration. The individual migration of people from one country to another is an example of E-I–type migration.

Over time, one type of migration may turn into another. A migration may start out as an E-I type and, as the number of immigrants grows, transform itself into an R-type. Also the R-type movement may be absorbed by the local population and, thereby, become an E-I-type of migration. When the place of destination is more or less densely populated, the child LS is usually absorbed by the ingestor subsystem of the LS in the place of destination, although at times the immigrating LS may displace or even exterminate the indigenous LS.

Living systems are more predisposed to migrate in Reproducer types of movement because such movements preserve their structure. This mechanism has developed across lengthy periods of human evolution in which populations reproduced themselves in less populous locations. The living system establishes its reproductive niche by forming streams of migration, information, and matter between the place of origin (the parent LS) and the place of destination (the child LS).

The establishment of a migratory channel is a function of the motor subsystems of sending and receiving LS. "Motor" is the subsystem that moves the system, or parts of it, in relation to part or its entire environment or moves its components vis-à-vis each other. Once started, migration flows from a common source area frequently accelerate even as interregional socioeconomic differences narrow. The migration of lower-level living systems may evoke the migration of living systems at a higher level. Thus, the migration of an organism may precipitate the migration of a group that of a group may precipitate the migration of a community, and so on. The enclaves may outgrow the demographic capacity of the place of destination, thereby causing social tensions between parts of the receiving LS and the immigrant enclave. This occurs when, due to dysfunction of the subsystems that deal with information; the decider subsystems of both the sending and the receiving LS act on the basis of obsolete and/or erroneous information in regard to desirable volume and composition of migratory streams. "Decider" is the subsystem that receives information from all other subsystems and transmits to them information that controls the entire LS.

LS at the place of destination tend to generate all twenty subsystems: decider, motor, etc. These subsystems exist during the migratory process and then usually expire unless it is R-type migration. The viability of these subsystems is a basis for the longevity of an immigrant enclave. It is in this manner that immigrant enclaves appear and eventually disappear. The LST analysis of this mechanism may be valuable in discussion of the fashionable controversy regarding the melting pot and the salad bowl as models of immigrant societies.

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How Structure Influences Behavior

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A major insight of what has been called "systems thinking" is that "structure influences behavior" (cf., Forrester 1968; Senge 1990). In the case of social systems, one ramification of this principle is that "when placed in the same system, people, however different, tend to produce similar results" (Senge 1990). In other words, it is the organization of the system (e.g., a business) that determines, to a large extent, the consequent behavior of not only individuals working within the system, but of the system as a whole (e.g., the financial performance of the business).

However, social systems are only one system considered beneath the wide umbrella of General Systems Theory (Bertalanffy 1969). Hence the principle that "structure influences behavior" applies to any system, meaning that the organization (i.e., structure, or even "organizational structure") of the system influences, to a large extent, the consequent behavior of smaller systems within the larger system as well as the behavior of the system itself.

This insight is widely taught in the engineering curriculum under the field of System Dynamics, which takes advantage of analogies between mechanical, thermal, fluid, and electrical systems. Any of the aforementioned systems, possessing a particular organization (i.e., structure) has a particular,

predictable behavior, regardless of the physical domain (whether mechanical, thermal, fluid, etc.) of the system. It then follows that the behavior of a system in one domain may be modeled by studying a system in another domain, so long as the two systems possess the same organization, usually expressed in terms of differential equations. These ideas are further exploited in Control Theory, where systems in a range of physical domains may be controlled with the same fundamental control schemes.

The concept of *affordance* can be used to better understand the principle that "structure influences behavior" using the following proposition.

Proposition: Systems affords specific behaviors via the structure of the system.

$$\text{structure} \Rightarrow \text{affordance} \Rightarrow \text{behavior}$$

Corollary: A change in system structure may result in a change of the system's affordances, which may result in a change in the behavior of the system. I.e.,

$$\Delta \text{ structure} \Rightarrow \Delta \text{ affordance} \Rightarrow \Delta \text{ behavior}$$

Here, a "system" means at least a pair of interacting subsystems. Important classes of these subsystems include users, artifacts, and organized natural systems. For an affordance relationship, and resulting behavior, to exist, the subsystems must be able to interact.

"Afford" means a relationship exists between the subsystems such that a behavior can manifest involving both subsystems that neither subsystem could manifest alone. Examples of affordances are that keyboards afford typing (by a user), brains afford thinking (by the organism), and (two or more) gears afford turning. The term "affordance" was introduced by the perceptual psychologist James J. Gibson (Gibson, 1979) and has since been utilized in the fields of perceptual psychology, childhood development, interaction design, artificial intelligence, and most recently to engineering design in a series of papers by the present author (Maier, 2005; Maier and Fadel, 2001, 2002, 2003, 2005; cf. Brown and Blessing, 2005; Galvao and Sato, 2005).

"Behavior" means the actual interaction between subsystems in manifestation—what is afforded actually happening. That an affordance exists simply means that a related behavior is possible, or able to be manifested, hence the postfix "-ability" used to describe most affordances.

"Structure" means the organization of a system (or subsystem). For affordances that exist between artifacts and users, especially in the context of mechanical design, it is the physical structure of the artifact that is of interest, and can be designed (for example the weight, handling characteristics, etc. of a vehicle) together with the physical and mental structure of the user (for example, anthropomorphic measures, reaction time, visual acuity, etc.) In other domains, other types of organization may be important, such as the organization of instructions in software code.

The above proposition describes *how structure influences behavior* in a system in general. The corollary states that by changing the structure of a system, designers can change the system's affordances. The affordances, in turn, determine how the system can potentially behave. Designers define the structure of a system, and thus its affordances, and thus how not only the artifact will behave but also how the user will behave with the artifact. For an expanded discussion, see (Maier, 2005).

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Development of General System Theory (GST)

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The idea of general systems theory appears to have been proposed by von Bertalanffy and Boulding, perhaps based on a hunch that viewing parts of the world as 'related objects' might be very general. Attempts were made in this direction along mathematical lines and seeking isomorphism as a source of fundamental and pervasive principles. Perhaps because of the immense diversity and variety of particular instances of the view, these attempts although impressive, have produced *little significant results* in the pursuit of making the view systematic and operational through predictive, reasoning models that can be related to   *experience* and used for *design*. In fact, an opinion prevailed that a GST, because of its generality, must be so abstract that it could not be related to experience. Conventional science was rejected in its *entirety* which with hindsight perhaps was a mistake.

The intention here is to outline briefly how a GST could be developed which :

1. Is applicable to *scenarios* with natural, technical and human components,

2. Is high in *analytical content* that can be related to experience and based in current knowledge,

3. Can serve as an *aid in design* of systems and products.

Empirical Background

At the most fundamental level human and animate beings appear to perceive parts of the world, permanent or changing, through their sense organs not so much in detail as in their *entirety*. A part of the world thus perceived is called a bounded 'whole' or 'object' and judgement is formed towards recognition possibly followed by response (lion (dangerous : run)). Sense organs are sensitive to physical effects. Thus, to create an impression for the mind to work on, a whole must be a *physical object*. Such objects may be classified into :

A. _Concrete_ - Inanimate (natural (rock, water, oxygen..), artificial (artefacts.., gear box, motors, knife..), natural changing (hurricane, volcano..)), Animate (cell, tree, zebra, man..), Technical (control and computer systems..), Animate activity (organs, forest, herd, human social (family) and production organisations) and

B. _Symbolic_ - which are carried by _medium_ in which _means with meaning_ for handling thoughts are embedded. Means with meaning are : 1. Images (pictures, sculptures, diagrams, shapes, signs and any object to which we can attribute means with meaning : works of art, gestures (with a fist..)), 2. Natural language (letters, words, sentences), 3. Music (symbols to express tunes, rhythm) and 4. Mathematics (symbols like letters, numbers and relations). Correspondingly, humanity has produced the basic disciplines of : 1. Arts, 2. Literature, 3. Music and 4. Conventional science (CS), plus the cross disciplines of engineering, medicine, law, economics etc.

CS is interested in further classifications as suggested by groups of properties of objects, usually quantifiable, and makes statements strongly based on _repeatability_ using mathematics for relating such properties. Thus, CS is compartmentalised, has limited interest in multidisciplinary, dynamic problems and in design.

Recently the interest of systems science (SS) in objects as classified above has shifted towards _investigation_ of possibility of _outcomes_ and _design_ (or evolution) of _scenarios_ so as to produce desired outcomes of selected objects. The production of recognised and acceptable outcomes involves :

1. In _static cases_ (a shoe or newspaper), groups of _related objects_ with specific properties (shoe = (sole (size, plastic), upper part (leather)), newspaper = (articles (crime..), pictures (coloured))) and

2. In _dynamic cases_ (assembly of shoe or newspaper), groups of objects with specific properties which _interact_ in terms of influence (information) or physical power (energy). Groups aggregate or aggregated so as to produce _emergent properties_ which make sense for the group as a whole but not for any of its elements (shoe = suitable for walking in). Activities of groups (_by purpose or chance_) means _complexity_ (horizontal view) and leads to _hierarchy_ of objects each with own emergent property (vertical view).

Language as the Model of Complexity and Hierarchy

The horizontal and vertical views comprise the _systemic view_ of parts of the world which is _pervasive, empirical and indivisible_. The model of this view should have features :

1. Be comprehensive to cope with the _generality_ of the systemic view,

2. Incorporate objects with _quantitative_ as well as _qualitative_ properties,

3. Have facilities for _predictive reasoning_,

4. Have means to connect its conclusions to _experience i.e. be testable_,

5. Be capable of use as a _design method_.

Preparation of a model involves the use of a _symbolism_ : mathematics or natural language (NL). The former is too restrictive, the latter satisfies features 1. and 2. and possibly 4.

There are problems : 1. To increase its expressive power, NL is rich in _linguistic complexities_, metaphors, innuendoes etc, 2. There is an immense diversity and variety of instances of the systemic view which makes it difficult to see how _empirical generalisations_ and a _model_ that can satisfy all five features can possibly emerge.

A solution to problems lies in transforming NL into _homogeneous language_ (HL) consisting entirely of 'basic constituents' or 'ordered pairs' which are _simple one – and two – place sentences_ with qualified elements like 'Smart _man_ in a hurry _shaves_ quickly' or '_Lady_ of the house _sacked_ the _maid_ who was disobedient'. These are the _minimal_ linguistic constituents which can be seen as

representations of 'related objects' and are used for : 1. Reconstructing *complex narratives* of scenarios, 2. Drawing *semantic diagrams* and *linguistic networks,* 3. Constructing schemes for *reasoning* including uncertainties associated with *human components* (predicate logic) and as design aids. This is a way to *development of GST*.

Conclusions

The approach of *breakdown* of complex entities and their *reconstruction* into conceptual wholes by means of some form of basic elements (in this case : simple sentences with stative or dynamic verbs and systematic *use of properties*) has been practiced by CS. It is the approach of *reductionism*. The verbose discussion of diffuse topics as currently practiced may be fine for *generating ideas*. It can lead to an 'Art of systems' but not to their 'Science and design'.

"Tropical" Emergy and (Dis-)Order

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The title does not refer to emergy calculated for the tropics, but to simplified math systems that still retain some of the features of the full system. "Tropical" Emergy refers to a version of emergy that may be calculated for cubes located on, say, a two-dimensional grid. The cubes can be considered as chairs placed in a room. The number of exposed lateral or side surfaces of the cubes or chairs can be considered as a simplified measure of gradients or Fisher information, which are, in turn, a substitute for energy. If two cubes are placed together, two side surfaces disappear, reducing "tropical" Fisher information of the two cubes. Emergy can be defined as related to the amount of tropical Fisher information used up in creating a structure. For example, if sixteen random cubes are combined into four groups of four two-by-two squares, the number of exposed surfaces decreases from 16x4 = 64 to 4x8= 32, leading to a transformity of 64/32=2. Examples are worked out and other types of order discussed.

Introduction

Since H.T.Odum was always interested in explaining his work to young audiences, for example by the use of icons that did not require reading ability, to develop network theory, he would have embraced the idea of studying simpler systems that convey some of the properties of emergy algebra, with only limited technical details.

Such so-called "tropical" information measures were outlined in the author's paper [Collins, 2005]. Readers interested in "tropical" algebra as a math subject can consult papers by Berndt Sturmfels and others. For these simple models, quantities such as emergy and transformity can often be calculated exactly, and various choices studied more easily as to their effects. In the previous paper [Collins, 2005] three types of order were discussed: 1) clumping order (measured by adjacent surfaces used up or decrease of Fisher information), 2) stacking order (measured by decrease of entropy), and symmetric order. A questionnaire found no agreement as to which configuration had the most order: A) stacking five chairs or cubes on top of each other, B) placing five chairs adjacent in a row, C) placing three chairs adjacent in a row and two chairs symmetrically on top of the three chairs, D) placing the chairs around a room like the five-pattern on a set of dice (somewhat like chairs in a classroom) and E) placing the chairs "randomly." As mentioned in the abstract, emergy seems most related to clumping order.

However in a weightless environment, there would be no distinction between clumping and stacking order, as adjacent cubes would become stacked if rotated 90 degrees from horizontal to vertical. Thus the top and bottom surfaces would be considered equivalent to lateral surfaces, which effectively combines energy and entropy calculations together. However it must be observed that this procedure "goes the same way" as official entropy calculation, i.e. stacking blocks reduces the

number of exposed top and bottom surfaces, thus decreasing our result, just as it decreases official entropy.

In the following sections four levels of C (or cell) transformity are considered, applying direct calculation and the program presented in the 1ˢᵗ emergy conference [Collins and Odum, 2000]: a) block, b) wall, c) tower, and d) castle. The goal is to explain how transformity works, as well as the program that calculates it. It is found that the procedure covers only reversible or embodied energy, so that the C-transformities come out rather small, but by including feedback loops, irreversible energy may be included to yield a more appropriate transformity measures. Thus a distinction can be made between embodied energy and emergy. Typically symmetric order is obtained by irreversible energy, as the energy spent straightening a picture frame cannot be recovered, but the energy spent stacking a chair can be recovered to some extent.

Block Transformity

Blocks can be created as combinations of cubical cells, or the "chairs" discussed in the previous section. This process is completed by companies such as the LEGO company. The creation of blocks from one-by-one cells is similar to the embodiment of solar energy by photosynthesis. Thus the one-by-one cell plays the role of the solar emjoule. Basically nothing can be built from one-by-one cells since there is no way to stick them together laterally (although they can be stacked on top of each other, which is not too interesting).

Although actually LEGO blocks are constructed at one-third and other heights, here they are all considered to be the same height. With this restriction, no top/bottom surfaces are used up in the block construction process. Also only double-wide blocks are considered from now on.

C-transformity is calculated as IN/OUT or total original exposed lateral plus top/bottom surfaces divided by total final exposed lateral plus top/bottom surfaces. Please see Table 1 for the results. This type of transformity would be created by the brick factory.

Table 1. Block Transformity (TR) or C-Transformity

Dimension	Lateral	Top/B	Total IN	Lateral	Top/B	Total OUT	TR=IN/OUT
1x1 block	4	2	6	4	2	6	1
2x1=2 cells	8	4	12	6	4	10	1.2
3x1=3 cells	12	6	18	8	6	14	1.285
4x1=4 cells	16	8	24	10	8	18	1.333
2x2=4 cells	16	8	24	8	8	16	1.5
3x2=6 cells	24	12	36	10	12	22	1.636
4x2=8 cells	32	16	48	12	16	28	1.714

Proto-Wall Transformity

 Building things with the blocks is made possible by putting prongs on the top surfaces and receiving grid holes on the bottom surfaces. Building something with the blocks requires at least two levels, i.e. stacking or entropy decrease, if it's kept track of. A perhaps overstrict stability criterion is that there is no vertical line of height two between blocks. With this restriction, various structures of height two, here called underline proto-walls, can be built and their C-transformity calculated. Three proto-wall structures are presented in Table 2.: 1) a 6x2x2 complete proto-wall made out of two 4x2 blocks and two 2x2 blocks, 2) a 10x2x2 incomplete proto-wall made out of four 4x2 blocks in a kind of "Z"

pattern, and 3) a 12x2x2 complete proto-wall made out of five 4x2 blocks and two 2x2 blocks. As mentioned above only double wide walls can be constructed wth double-wide blocks.

Table 2. Proto-Wall C-Transformity

Observe in Figure 1: The program can calculate proto-wall transformities in terms of block results instead of cell results, and so on.

Dimension	Lateral	Top/B	Total IN	Lateral	Top/B	Total OUT	TR=IN/OUT
6x2x2 complete proto-wall							
2 2x2's =8 cells	32	16	48				
2 4x2's=16 cells	64	32	96				
Total 24	96	48	144	32	24	56	2.571
10x2x2 incomplete proto wall							
4 4x2's=32 cells	128	64	192	40	40	80	2.4
12x2x2 complete proto wall							
2 2x2's=8 cells	32	16	48				
5 4x2's=40 cells	160	80	240				
Total 48	192	96	288	56	48	104	2.769

Of course, many more proto-wall types can be built. However, their basic C-transformity seems to be in the range of 2 to 3. Any combination of blocks that gives the same result will calculate to the same C-transformity, although not all would be stable. Later a way to add to C-transformity through feedback to take stability into effect will be presented. Proto-walls can be stacked on top of each other and their C-transformity calculated; this case is left as an exercise.

Tower Transformity

Four proto-walls can be connected to form a proto-tower, i.e. a tower of height two. A rather striking result is that any rectangular proto-tower (i.e. with height 2) has C-transformity exactly 3. The general result for the C-transformity of a tower of height m is TR= 6m/(m+2), which reduces to 3 in case m = 2. This value 3 is also the limiting C-ransformity of an infinitely long proto-wall. The limiting C- transformity for an infinitely high tower is 6 as m goes to infinity.

Castle Transformity

By combining 3x2 and 4x2 blocks, it is possible to create a stable proto-"castle" with 4 towers and 4 connecting walls (all at height 2). In the case of 12x12x2 proto-towers and 6x2x2 proto-walls, the result has C-transformity 3.067 due to the surfaces used up connecting walls to the towers.

All of the above structures can increase C-transformity by going from a "proto"-structure with height 2 to a structure of height m. For example, a "castle" of height m=6, made by placing 3 proto-castles on top of each other, increases C-transformity to 4.651, with believed limit 6 as m goes to infinity.

Program Matrix

Cell	2x2	3x2	4x2	6-wall	10-wall	12-wall	12tower	pr-castle	6-high castle	
24	-16	0	0	0	0	0	0	0	0	2x2 from cells
36	0	-22	0	0	0	0	0	0	0	3x2 from cellls
48	0	0	-28	0	0	0	0	0	0	4x2 from cells
0	32	0	56	-56	0	0	0	0	0	fr 2 2x2 & 2 4x2
0	0	0	112	0	-80	0	0	0	0	from 4 4x2 block
0	32	0	140	0	0	-104	0	0	0	fr 2 2x2 & 5 4x2
0	0	0	560	0	0	0	-320	0	0	tower fr 4x2
0	0	352	2240	0	0	0	0	-1440	0	from 3x2 & 4x2
0	0	0	0	224	0	0	1280	-1440	0	fr 4 wall & tower
0	0	0	0	0	0	0	0	4320	-2848	from 3 pr castle

TR C-transformity output

Cell	1
2x2 block	1.5
3x2 block	1.636
4x2 block	1.714
6x2x2 cl pr-wall	2.571
10x2x2 incl pr-wall	2.4
12x2x2 cl pr-wall	2.769
12x12 pr tower	3
pr castle	3.067
6-high castle	4.651

FIgure 1. The point of the program is that (C-) transformity can be calculated from numbers of later ingredients instead of directly from cells. Both stable and unstable ways of creating proto-castles have the same C-transformity 3.067 (2nd and 3rd rows from bottom).

Transformity Program

The program of the 1st emergy conference [Collins and Odum, 2000] seems to work well to calculate C-transformity, as Figure 1 illustrates, although it cannot distinguish stability. For example as well as combining 3x2 and 4x2 blocks, it is possible to make a proto-castle as described above by combining 4 wall of type 6x2x2 with 4 proto-towers of size 12x12x2, although the result would not be stable because there is nothing to stick the walls to the towers. However the C-transformity comes out the same. Please see Figure 1. It may be mentioned that the rows of a consistent program matrix can be multiplied by any factor without changing transformity results. However if everything is done on the same scale (for example in terms of exposed cell surfaces), it is easy to build up new structures from previous rows and calculate their transformity. Thus it is possible to construct general schema in terms of number of structures combined and their result, which can be put in as rows of the program matrix. It is only necessary to include rows whose output is needed later.

Emergy versus Embodied Energy

So far, increasing C-transformity of the block calculations seems to go with increasing complexity. However the technique employed here seems to measure embodied energy versus all the energy used up to make something, i.e. it is possible to distinguish between reversible energy used up to make something, which may be termed "embodied energy" and can be recovered; and irreversible energy (which cannot be recovered) used up to make something. Althouh the two terms were used interchangeably early in the literature, H.T. Odum stressed the irreversible energy losses at each stage as contributing to emergy. Here for example, no attempt is made to calculate the energy required to move the blocks around, which , if included, would greatly increase transformity.

Further, for example, including windows and doorways in the wall and castle structure would expose more surfaces and thus decrease C-transformity due to embodied energy, while apparently increasing complexity. Typically such structures as doorways require much more effort and thus lost energy and would overall increase emergy. Of course towers and castles with no doors are effectively useless.

As another example, constructing a solid cube with the blocks, disregarding stability considerations, can increase C-transformity to infinity, although it does not appear to increase complexity. The C-transformity of a solid cube goes up because all the interior surfaces are used up.

Feedback

Here is where feedback comes to the rescue. The program so far seems to take into account bottom up or feed forward considerations rather well. However one of the criticisms of Odum's network theory was lack of ability to take into account feedback structure. That this criticism is unwarranted can be seen through the ability of feedback to take into account irreversible energy losses. These losses appear in the upper right triangle of the program matrix. For example the energy required to put the blocks together laterally to form a wall can be considered as irreversible energy due to a high-transformity mason. And the energy required to tell the mason where to put the wall (i.e. the sound energy of the words "Put the wall here.") can be considered the even lesser energy input (called "control information" in [Corning and Kline, 1998]) due to an even higher-transformity architect. Please see Figure 2.

Program Matrix

Cell	2x2	mason	architect
24	-16	0.002	0.0002
10000	0	-1	0
100000	0	0	-1

TR   Transformity output

Cell	1
2x2 block	4
mason	10000
architect	100000

Figure 2. Smaller and smaller feedback input energy from higher and higher transformity agents contributes to the overall transformity. The basic C-transformity 1.5 of the 2x2 block is increased to 2.75 by the mason, say putting the block in an actual straight line (2.75 found by putting architect feedback .0002 to 0), and then to 4 by the architect marking out the straight-line position for the block. The last two types of energy input may be considered as increasing symmetric order. Another type of order may be taken as functional order, which has to do with getting things to work, or arranging them in time sequence, in a fourth dimension.

A way to distinguish between stable and unstable wall structures is through the top-down feedback energy of an expert who supervises the stable construction, thereby increasing its transformity or energy quality. Of course the expert would be responsible for including the proper ingredients. As expressed in [Collins, 2005], order appears to be substantially in the eyes of the beholder, so that various inputs of energy , even advertisement money, can be considered to increase transformity or emergy. This view is opposed to Marx's theory of value, which only considers work of production as contributing value.

Conclusion

This paper attempts to explain networks and transformity by a simpler calculation of cell or "C-transformity" that can be done exactly: how many exposed surfaces to start out with, supposing cells scattered randomly and how many exposed at the end. This reversible or embodied energy can be recovered if the cells are separated, exposing their surfaces again. The transformity program shows how this bottom-up calculation can be carried out step-by-step without going back to the original cell-level. Feedback allows things to obtain higher transformity through substantially irreversible top-down energy inputs. It is hoped these ideas can apply to evolutionary development as outlined in [Carroll,2005], as well as advance H.T. Odum's ideas..

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Cooperative Dynamic Complexity

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The introduced dynamic macrocomplexity (MC) is an *indicator* of the phenomena and parameters of the *cooperative* dynamic process (Lerner, 2005a) in a complex system with the macrolevel's dynamics and random microlevel's stochastics Lerner, 2005b]. The MC, arising from the unification (or decomposition) of the system's elements, is defined by the *information measure*, allowing for both analytical formulation and computer evaluation. The MC cooperative mechanism is analyzed using the *minimax* variation principle (VP) of Information Macrodynamics (IMD). When applied, this principle creates a transition from a local, unstable process' movement to a local, stable process – the former associated with the current influx of information that precedes cooperation and the latter continuing after the cooperation with incoming information and its accumulation. This transition enables producing the cooperative phenomena, in particular, the contributions from different *superimposing* processes, measured by the MC.

The IMD optimal consolidation process forms the information hierarchical network (IN) consisting of the system's elements sequential cooperation by three. The MC of such optimal cooperative triplets' structure is measured by the IN's *triplet code* as an algorithm of the minimal program.

The *hierarchical* MC measures the complexity of the system's *ensembles*, cooperating into the IN during a multi-dimensional cooperative process. For the IN's sequentially enclosed nodes, the MC also provides a measure of the level of the systems' *organization*, while the complexity of the following node includes the complexities of all the previous IN nodes. The representation of such information allows us to introduce a measure of the *quality* of information, distinguished by the information quantities, accumulated at each IN's level, which is related to an adequate cooperative complexity.

The MC covers the Kolmogorov's complexity, which measures a deterministic order over a stochastic disorder by a minimal program, as well as the statistical complexity. The MC specific consists of providing a precise complexity measure of the *dynamic irreversible process*, which evaluates the above forms of complexities by the *hierarchical structure* of information contributions in bits of information. The VP's defined intervals of observations, when the contributions are measured, allow formalizing both an observer and the local contributions as well as hierarchically structuring them by quantity and quality of information. The geometrical space curvature conceals information of the cooperative structures in the cells' form, whose code, in particular, measures the cooperative complexity. The process' trajectory, located in this geometrical space, acquires a sequence of the code cells (Lerner, 2005b).

The introduced MC leads to a constructive *definition* of complex system with the particular complexity measure and the systems classification.

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Management and Systems Science: Science, Art, Both, or Neither

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No one doubts that management, as a social practical activity (rather than an imaginary game) and as a discipline originated from both science and social science and from practical demands as well, requires interdisciplinary study (Jackson, 2005); and systems sciences, as the evolution of the name of this society, have originated from first 'general system theory' in 1954, then, 'general systems research' in 1955 and finally to systems sciences in 1988 with the great ambition of its founders and later arrivals.

Bertalanffy, Boulding, Gerard, Miller, and Rapoport transformed theoretical knowledge like concepts, models, laws or principles developed from one discipline to other domains where they are needed or lack the realization that the whole is greater than the sum of its parts (ISSS website).

On one side ,as its mission reveals, systems sciences have emphasized theoretical studies for transcending the boundaries between the established academic disciplines for general theoretical or experimental results in terms of the science of synthesis from a historical, theoretical or philosophical perspective or as an inter- or across- discipline as Troncale argued at the ISSS annual meeting in 2000 at Toronto Canada. On the other side, some modern applied systems pioneers like Churchman, Ackoff, Beer, Forrester, Checkland, and Jackson have explored and exploited approaches for transforming research outcomes from the established disciplines such as mathematics, cybernetics, sociology, political science, economics, and philosophy to organization and management. In other words, they have emerged as a unique school for *solving, resolving, or dissolving* problems, issues or *messes* managers and practitioners face from a *systems* perspective[2] (Churchman, 1968; Ackoff, 1999; Jackson, 2003; Troncale, 2000; Hammond, 2003). In Churchman's words the systems approach begins when first you see the world through the eyes of another (1968).It can be said that systems sciences now takes organization and management as one of their very important target domains for transforming knowledge from other disciplines. My concerns here focus on this i.e. the application of systems thinking to organization and management.

The contemporary field of organization and management studies are a creation in the last half of the twentieth century, but the history of the application of systems thinking to them is as old (if not older) as that if we take operational research as the beginning of the modern applied systems thinking (Augier, et al. 2005; Jackson, 2003). The co-evolution and integration of management and systems science have made modern applied systems thinking not only an academic domain of academic journals (like OR and systems sciences related journals), of professional associated communities (like ISSS) and of scholarly identity (i.e. professorship or Ph.D) like the traditional disciplines but also a home of creating business professional knowledge. Various theories, methodologies and approaches of management to organizations or firms such as social systems design (SSD), interactive planning (IP), strategic assumption surfacing and testing (SAST), soft systems methodology (SSM), viable systems model (VSM), team syntegrity (TS), participatory appraisal of needs and the development of action (PANDA), interactive management (IM), systems analysis (SA), systems engineering (SE), and Creative Holism (CH) from systems viewpoints (of different sociological paradigms) have been developed. However, unlike scientific discoveries, none of them , as well as any other management theory or approach, can guarantee a successful practical action for a business organization. What does this mean? Does this means that those research outcomes are nonsense? Does this provide an excuse for autocratic management or a legitimate reason for advocating thumb-rule or intuition decision-making?

No, the answer is not. Some people may argue that management is an art because its success highly depends on the persons in charge. Top-down managerial strategy has created many such heroes around us. Management is an art; it is also a science. We should understand and bear in

mind that theoretical research on management and organization, unlike scientific research that aims at discovering general or universal truths or principles, is to observe, discover and study various forms, structures, functions and characteristics of organizations. It is also to discover or create corresponding alternative procedures to realize organizational vision and mission in an effective and efficient way rather than to create a panacea for organizational operation and management. No managerial panacea exists. This is decided by our research object. An organization or firm is made up of people and other elements. The complexity and diversity of human species from person to person, given all other elements being the same, makes any two organizations different. It is at this point that we cannot treat the research results of organization and management as that of science. Management theories and approaches to managers and practitioners are like the theories and knowledge of color and light to artists. There exist few genius artists, but to most people to become qualified artists, the best and rational way is to systematically learn the theories and approaches of art in a professional institute. Just like that mastering artistic theories and approaches does not mean you become a recognized artist, mastering management theories and approaches also cannot make someone be a successful manager or practitioner. But the knowledge people learn about management or art can greatly improve the possibility of becoming a successful manager or artist. Therefore management theories and approaches are very important to those people who want to become managers. They are also the language for communication in business world.

Creative holism, which manages the knowledge about business knowledge and complex business situations with different sociological paradigms and metaphors of organizations, provides an alternative way for systematically studying and learning management theories and methodologies (Jackson, 2003). With more than one hundred years' history of higher education in business (Tuck school website), first class business schools, either academic-oriented, professional-oriented or both, can improve their structured knowledge about organization and management and their facilities if their curriculum for various structural knowledge about business organization and its management at different levels for different purposes are coherently, sophisticatedly, and compre-hensively designed from a critical systems perspective and their campus study environment or in Japanese term *ba* is purposefully designed and utilized (Jackson, 2003; Nakamori, 2006). This is a choice, a choice based on an expectation and experiences for making a world better for us and future generations. Management can be an art and science; it can be nothing as well, because different minds conceive different answers.

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Open Systems Research Group
Director: Professor Ray Ison
Address
http://systems.open.ac.uk

The Open Systems Research Group (OSRG) was established in 2004 to draw together and support systems research within the Open University's Faculty of Technology. The group is 'open' in two senses of the word. First, it demonstrates that the group is part of The Open University, and second, it expresses the Group's wish to establish links with both the academic and the non-academic community.

Research in the OSRG is informed by a shared interest in systems thinking and systems practice, as applied in particular to the two themes of sustainable development and information systems. The concept of social justice and the practical implications for responsible research feature strongly in OSRG thinking.

The Group embraces a broad and inclusive definition of research, including not just the traditional scholarship of discovery, but also the scholarship of integration, of application, and of teaching. OSRG research is strongly interdisciplinary and often involves co-researching and action research, working with individuals, groups and institutions to help bring about improvements to complex situations.

Three representative projects are described below. Further details of other projects can be found on the Systems website, as part of the group report at: http://systems.open.ac.uk/objects/publications/leaflet_240605.pdf

SLIM project: Social learning for water basin management planning

In an EU-funded research project called SLIM (Social Learning for Integrated Management), an international team co-ordinated by the OU's Systems Department worked with staff in a variety of water-related organisations to study the factors that might contribute to an effective interactive approach to implementing the EU Water Framework directive, and to identify the skills that such an approach requires. The research was based on case studies in France, Italy and the Netherlands, as well as in the UK.

The Tweed Forum, a consortium of local government agencies and interest groups set up to co-ordinate activities affecting the River Tweed, one of Scotland's prime salmon rivers, was the main case study in the UK. Two public consultation meetings were held, based on the traditional format of official speaker followed by questions and answers. The research team and Forum representatives reflected together on the outcomes, developing a more interactive format for subsequent meetings, incorporating ideas and activities from soft systems methodology.

SLIM's research partners in other countries have investigated other interactive approaches. In Italy, for example, the researchers used geographic information systems (GIS) with stakeholders in a two-way learning process.

Responsibility for compiling and disseminating the research findings has been shared among the research partners. The end of the project was marked with a three day interactive event with policy makers and other interested groups in Brussels. Interviews which had been held with key EU-level stakeholders to learn about their issues and concerns were discussed in relation to the research findings from the project.

Link: http://slim.open.ac.uk/

VIRTU@LIS: Use of information and communication technology to improve understanding of, and involvement in, environmental issues and actions

The Virtu@lis project is investigating how applications from information and communication technology might be adapted or developed to provide people with timely and reliable environmental information, stimulate discussion, deepen understanding, and encourage more people to become actively involved in securing environmental improvements.

The Virtu@lis team includes researchers from France, Portugal, Norway and Italy as well as from OSRG. It brings together specialists in information technology, sustainable development, environmental modelling, public policy, educational psychology and distance learning. Concentrating on computer applications relevant to the environmental issues of agricultural pollution, climate change, water resources, and marine fisheries, the research team is investigating personal barometers, scenario simulations, games, and virtual reality visits. Personal barometers allow people to work out how their own lifestyle, such as their mode of transport, affects the environment and how effective any changes might be. Scenario simulation allows users to explore the effect of changes in resource use, at either an individual or aggregated level. Computer games can allow players to learn about issues such as governing access to natural resources like fish, and the skills needed for negotiation and conflict resolution. The virtual reality visits allow users to see for themselves examples of good management practice or environmental damage.

All the applications can serve as a stimulus for discussion and shared learning. The aim of the Virtu@lis project is that they will help to counter the sense of inevitability and helplessness that people often feel in the face of environmental problems, encouraging instead the view that an individual's actions can make a real difference.

Links:

OU virtualis information: http://systems.open.ac.ukpage.cfm?pageid=sustdevptV

Virtualis project information, European level: http://neptune.c3ed.uvsq.fr/virtualis/

PersSyst: Systems Thinking and Practice at the Open University

The PersSyst project was launched in 2004 as a 3-year systemic inquiry into building capacity within the Open University for systems thinking and practice using an action research approach. The aims are to generate internal capacity for the learning organisation and develop leaders with the ability to think holistically.

The project has three strands of activity:

• Developing the systems skills of managers via a programme of workshops and courses which covers methods and approaches such as soft systems methodology, systems diagramming and themes such as multiple partial views.

• Collaborating with individuals and teams as they tackle real situations, which involves working alongside the managers and groups and attempting to build understanding of the issues through systems skills, techniques and ways of working.

• Facilitating the emergence of a leadership community by encouraging people to find ways of sharing experiences and learning from each other, through for example learning sets, seminars and reflective practice.

The systemic inquiry mode is an attempt to engage in a living inquiry - learning-as-we-go-along that is structured, critical and reflective. The overall systemic inquiry model - testing, adjusting and seeking to map its pattern onto work at other levels as the project progresses – means that using this model in a structured and reflective way will inform others about what it means to build capacity for systems thinking in organisations.

For example, the workshops that the team has been delivering have evolved from a frame in which it was assumed that systems thinking was being taught to managers and their teams towards a frame in which managers are being supported and challenged to engage and work with the dynamic situations that they encounter. The core group working on delivery is made up of an interdisciplinary team from both the Systems Department and Human Resources division supported by other members of the university's community of systems practitioners.

Searching a Sensible Option for Us
Elohim Jimenez

The manifestation of earthly life since around 1,800'000,000 years ago is undoubtedly a speculative appreciation made by enlightened humans who examined the evidence of facts discovered, being supported by geological data. However, interesting to confirm this assumption, to prove absolutely the validity of this guessing will be impossible forever. Instead of that, it seems useful and even indispensable to continue searching evidences about the presence of those peculiar circumstances caused by the mysterious emergence and development of the definitely grandiose **EUKARYOTE**. It was originally the creature with a well organized nucleus, which emerged without knowing in advance that its evolvement would become gradually the terrestrial NATURE; it occurred as it managed to learn on its own to proliferate and develop its intrinsic features. It was an event encouraged by the universal evolutionary forces, which became bio-friendly in the domain of Gaia thanks to the light, heat, - all in all - the energy of our Sun.

Altogether, these natural adventures have maintained those environmental features on our planet remaining as the suitable conditions needed for the evolution of unique living circumstances, which suddenly and even unexpectedly caused the emergence and development of our human functionality. These are the conditions that became and still persist time and time again, as the inexhaustible spring of new living species during more than 1.000 million years.

This event has occurred ceaseless, heartened by itself though occasionally disturbed by internal planetary forces and some cosmic ones that only sometimes reached the planet. The result of this magnificent phenomenon, which should not be questioned at all, is the diversified evolution of multicellular organisms: fungi, flora and fauna, whose presence in time and in space is perceived distinctly but also differently by every individual living entity.

It is the phenomenon that rather lately, around 300 millennia ago, culminated with the emergence of the human intelligence, which judged through human appraisals appears to be the highest evolutionary possibility ever happened, without being sufficiently recognized until today, that it, as a fact, has become highly questionable. **WHY does it happen this way?** would ask those who dare to perceive as objectively as possible **the consequences of most human concerns** on the terrestrial reality. However conventionally high might look the superb human intelligence, the performance of many humans, mainly those who are deciding or willing to accelerate the civilizing (?) trajectory, is obviously the outcome of **an increasingly controversial intelligence**.

The whole Homosphere built quite disorderly during the last 500 years has become all along the last century a higgledy-piggledy product of a peculiar kind of intelligent (?) reasoning that dares to be increasingly creative but remains unable to comprehend neither itself nor the surrounding (terrestrial) reality.

During the present year, while dealing with my research **"Philosophic Perspectivism"** (ISSS 2005 Bulletin, January 2005) I have advanced in getting a better comprehension of the causality of the serious man-made crisis. It has obstructed the evolutionary perspective of the human features; causing in addition all over the world the disruption of natural circumstances and even affecting seriously the Earth's atmosphere. Though I have not yet integrated a conclusive panorama, I dare to motivate myself to extend my researching concern.

(1) How the dynamics of every civilizing forum, which unconsciously aims at increasing continuously its domain do not realize in time that various kinds of attitudes, engendered by civilizing achievements and experiences, have been causing inevitably the emergence, growth and degradation of human concerns. Suddenly it becomes evident to every person to believe that certain humans:

* can be the owners of terrestrial things and beings (comprised masses of people);
* can invent anything that may allow them to conquer everything on Earth;
* are entitled in the name of one or another God (conceived necessarily and exclusively through human thinking) of warring against other humans defined conventionally as being kidnapped by devil forces or described simply as enemies of God or against holy purposes;
* must control the performance of masses of people: who ought to be exclusively slaves, serfs, soldiers, workers, employees,...; who should learn systematically how to be disciplined human resources;
* are entitled to create, preserve and improve one or another kind of high society with groups of people selected for enjoying privileges;

A very first hypothesis about this fallacious absurdity seem to be the unconscious laws that have determined the dynamics generated by the mercantilism invented by the very first high societies constituted in order to enjoy the privileges that they assigned to themselves. A dynamics that has prevailed until today supported by all kinds of warfare (conventional, economic, political, cultural, ideological,...) against dissidents, insurgents, terrorists,...

(2) How could words and signs, integrated as arguments be employed as responsible interpretation of the knowledge of the terrestrial reality acquired, bearing in mind: that the surrounding reality can be only relatively perceived; that the knowledge structured by other minds can be only relatively consistent to any other else.

...searching in my mind to become sufficiently optimist,
daring to base my feelings on empirical assumptions
of what human nature is and how it might still evolve;
I dare arguing that humankind may still survive
some more thousand millennia;
if every mind encourages itself
to motivate everyone else
to play sensible and responsible roles anywhere
while exploring ways to build on his and her own
challenging perspectives for learning
to behave humanely and
perform ethically, ethologically and ecologically
while acquiring deep and extensive knowledge
- about the ecosphere, the biosphere and the homosphere -
for being able to answer sensibly, consistently, congruously,...

WHY humans must be conscious enough of the crisis' causality,
engendered by narrow minded and shortsighted performances of billions of humans?

WHAT the human presence in time and space should be FOR?

WHY and HOW every human must learn to behave responsibly
facing holistically the living circumstances anywhere?

HOW every human, everywhere, might help
the web of life to DEVELOP its FEATURES
in the unique planet where we might still develop a humane perspective?

SECTION TWO
MEETINGS AND CONFERENCES

The 50th Annual Meeting
International Society for the Systems Sciences
Sonoma State University, CA   USA
July 9-14, 2006

The 50th anniversary conference of the International Society for the Systems Sciences offers an opportunity to celebrate a half-century of theory and practice in the broadly defined field of systems, to reflect upon what we have learned, and to collaboratively envision future directions. This year's meeting will be jointly held with the American Society for Cybernetics, and will include representatives from the System Dynamics Group, bringing together three primary strands within the broad spectrum of systems thought. Drawing on Bateson's notion of the "pattern that connects," this conference will highlight both patterns and practices that connect. The ISSS was initially founded to bring together scholars from a broad range of disciplines, to explore common patterns of organization in different kinds of systems, as well as common theoretical frameworks underlying the various fields. Over time, it has evolved to incorporate methodologies for problem solving in complex systems, involving interactions between biological, social, technological, and ecological systems. During the last fifty years, the field of systems research has exploded into a myriad of specialized fields and schools of thought. My goal for the 50th annual meeting is to bring together representatives from as many systems-related organizations as possible, in the spirit of the original founders, to learn from each other and to nurture a more integrated and systemic way of understanding our world and living in peace with one another. Under the general theme of "Complexity, Democracy and Sustainability," the conference will address such questions as: "What can the sciences of complexity teach us about social justice and sustainability?" What is the nature of the relationship between information and consciousness? How do we manage information in a way that fosters effective decision-making processes? How do we nurture organizational structures that serve human needs while also protecting our resources for future generations?

The conference will be held on the Sonoma campus ofthe California State University in Cotati, California. There will be ample accommodation on-site and other hotels available close to the University.

For further information please email isssoffice@dsl.pipex.com

For program ideas and discussion please contact ISSS President-Elect Deborah Hammond at hammond@sonoma.edu

Deadlines

Abstract Deadlines

The final deadline for the submission of abstracts is May 31 2006.

Conference Registration Form and Payment Deadline

The conference registration form and full payment are due with the submission of your abstract. There are early-payment discounts until April 16, 2006. The payment will be refunded if the abstract is not accepted.

Please send your conference registration form and payment to:

Ms. Jennifer Wilby, ISSS VP Administration, 47 Southfield Road, Pocklington, York YO42 2XE, UK

Paper Deadlines

The deadline for the submission of full papers is April 15, 2006. Late papers will have the option of being included in the 2007 CDRom proceedings. Please follow the directions on the website for the submission of papers. The proceedings editors can be contacted at isssoffice@dsl.pipex.com or by tel.: +44 1759 302718

Paper Editing

The official proceedings of the ISSS 50th Annual Meeting will be published on a CD ROM as well as the ISSS website The editors of the proceedings are Jennifer Wilby and Janet Allen.

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 Vickers award. If you have received your degree, please certify that this work was performed while you were still a student.

ISSS 2006 Special Integration Groups
Descriptions and Calls for Papers

The 50th Conference and Annual Meeting of the ISSS promises to be a grand event. It will take place from 9-14 July 2006 at Sonoma State University in Rohnert Park, California. The theme of this year's conference is: "*Complexity, Democracy and Sustainability,*" and will address such questions as:
- What can the sciences of complexity teach us about social justice and sustainability?
- What is the nature of the relationship between information and consciousness?
- How do we manage information in a way that fosters effective decision-making processes?
- How do we nurture organizational structures that serve human needs while also protecting our resources for future generations?

To address these questions, the conference will be organized around four sub-themes:
- o Complex Systems and the Roots of Systems Thinking
- o Self-Organization and Living Systems
- o Ecological Systems and Sustainability
- o Social Systems Design and Practice

The conference theme, guiding questions, and sub-themes serve as platforms for consideration by the various Special Integration Groups that comprise the backbone of the ISSS.

See also Special Integration Groups, which describes the ISSS-wide purpose and organization of the SIGs.

See also Vickers Award for Best Student Paper.

SIG 1: Systems Applications in Business and Industry

SIG Chair: David Ing

sabi@systemicbusiness.org

Authors are welcomed to share their papers and wisdom on Systems Applications in Business and Industry in Singerian Inquiry sessions at the 2006 ISSS meeting in Sonoma.

The SIG on SABI is one of three sessions that seem to forming as a track on business, across the afternoons of the Sonoma 2006 meeting. The other sessions, on Organizational Transformation and Social Change, and an emerging Symposium on Economics, will be scheduled (hopefully) on a non-conflicting stream.

The SABI sessions at Sonoma 2006 will follow the approach that proved successful at Cancun 2005, Asilomar 2004 and Crete 2003. The agenda not only allows each author to relate the research that he or she has recently conducted, but to also share in the development of new knowledge by drawing on the wisdom across all participants. A Singerian Inquiry, as described by C. West Churchman in *The Design of Inquiring Systems*, is a systemic approach that features both multiple perspectives, and the "sweeping in" of new knowledge. Authors and attendees at prior sessions have reported great satisfaction in this lightly structured, free flowing approach to conversation.

Prior to the meeting:
- Authors may discuss their ideas about potential contributions with the SIG chair, David Ing (sabi@systemicbusiness.org).
- Authors submit abstracts. Abstracts are posted on a web site for review by all. Preliminary discussions about clustering ideas into sessions are facilitated online through web forums/conferences.
- Authors submit final papers. Papers are clustered into session of three to five papers. Preliminary discussions about ideas are facilitated online through web forums/discussions.

At the conference:
- In each session, each author is permitted up to five minutes to present the key ideas of their papers. For the remainder of the 90-to-120 minute session (of which each speaker is the focus for about 15 minutes), an open discussion on common themes and differences between the papers gradually reveals more details about each author's thinking. Non-authors are welcomed to ask clarifying questions and contribute additional ideas, later in the session.
- After the meeting, digests are posted on the Internet, and audio recordings may be available on CD-R. The artifacts from Crete 2003 are available at http://systemicbusiness.org/digests/sabi2003. (The 2004 and 2005 artifacts are still under development).
- Authors who require more than five minutes to present their papers should not designate their papers for the SABI stream. The chairs of the streams on Organizational Transformation and Social Change, Human Systems Inquiry and Evolutionary Development aim to work together to appropriate place papers, and work through scheduling challenges.

Attendees from the Ackoff Center for Advancement of Systems Approaches, and from the Center for Organizational Dynamics at the University of Pennsylvania are especially welcomed to contribute papers to this Special Integration Group.

Presentation Format: Authors will be asked to provide very brief (i.e. five minute) summaries of their key ideas or findings. The balance of the time is devoted to discussion between authors and participants about the topics. The use of Powerpoint is extremely discouraged, and LCD projectors will not be available. A flipchart or white board may or may not be available, for those who find that diagrams accelerate audience understanding.

SIG 2: Hierarchy Theory

SIG Chair: Jennifer Wilby

commsjmw@dsl.pipex.com

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 sub-units 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. In addition, this year it would be interesting to hear from people willing to participate in discussion sessions on the principles and practice of hierarchy, and input is welcomed as to what form these sessions should take.

SIG 4: Systems Philosophy and Ethics

SIG Chair: Kurt Richardson

kurt@isce.edu

Exploring Boundaries Our understanding of the notion of 'boundary' is key to our understanding of a systems-based philosophy and ethics. For example, if we assume that systemic boundaries are absolute, real and easily recognizable then it is possible to develop a universal philosophy and a universal ethics that provides explicit guidance for how we can lead a 'good' life in all contexts. We might refer to this as Modernist Ethics with its focus on a universal set of rules and the 'abstracting-away' of context. If we are more inclined to assume that boundaries are merely a feature of our explanations and not an inherent characteristic of the real world, and that boundary recognition is radically context dependent, then we may be more inclined toward a relativistic philosophy in which anything goes. In such a philosophy, whether a particular action is seen as 'good' or 'evil' is completely in the eye of the beholder – context becomes so important that the ability to abstract away from the concrete and develop useful rules of thumb becomes impossible.

In (complex) systems thinking the notion of 'boundary' is problematized. A particular boundary is seen as a temporary and (critically) emergent pattern whose ontological status cannot be easily associated with either 'real' or 'non-real'. As such it is possible to empathize both with the view that boundary recognition is strongly context dependent (therefore containing a significant subjective element), and with the view that boundaries are an intrinsic property of any system (whether absolutely real or not) and therefore allowing – to some extent – the development of quasi-objective tools for their determination. In a general sense a complex systems view of system boundaries acknowledges that they are both simultaneously 'real' and 'non-real'. This may seem an odd suggestion to those who find comfort in the binary logic of Modernism, but complexity thinking provides ample evidence to suggest that such binary 'language' is not sufficient to understand such systems in their own terms. Although 'dichotomization' is essential to the process of 'languaging' and therefore understanding, it restricts (as much as enables) our view of such systems. A systems view of philosophy and ethics demands a more sophisticated view of language and its relationship to the 'objects' of our interest, than is proffered by representationalist (i.e., Modernist) views of knowledge.

(Complex) systems thinkers who are interested in this issue of how our understanding relates to a systemic universe, and how certain actions might be chosen over other choices, are encouraged to submit their ideas to this SIG by February 28th 2006. The kinds of discussions that are relevant to this special session are:

- Status, limits and legitimacy of knowledge regarding complex systems
- Relationship between linear and nonlinear philosophies
- Systems-based ethics • Systemic limits to theories of everything
- Systems and the social sciences
- Systems and globalization
- Systems and human subjectivity

Proposals (i.e., abstracts of no more than 500 words) will be chosen from those submitted based on their relevance to this session. Contributors of selected proposals will then be encouraged to submit full papers which will be considered for publication in the journal Emergence: Complexity and Organization.

Presentation Format: The session itself will not be run as the usual one-to-many lecturing (i.e., formal presentations will NOT be the dominant mode of interaction), but with a more interactive (dialogical) mode focusing on critical discussion of the keys themes.

SIG 12: Epistemology and Metamodeling

SIG Chair: John P. van Gigch

vang@sonic.ne

Additional Contact: Janet McIntyre-Mills

janet.mcintyre@flinders.edu.au

This year we will work to enlarge some of the themes that have been discussed at the ANZSYS conference that was held in Dec 2005 in New Zealand. We continued our effort to follow the West churchman's Legacy. This effort culminated in the publication of the first volume of the Kluwer/ Springer Book series entitled C. West Churchman's Legacy and Related Works.

We call for papers which refer to Churchman's work to emphasize the role of inquiring systems in the search for enemies of the Systems Approach. We are particularly interested to pursue inquiries that trace the epistemology and knowledge which will enhance democracy, human relations, governance, social, cultural political, economic and environmental concerns to "ensure a sustainable future for ourselves and future generations." (From the cover of RESCUING THE ENLIGHTENEMENT FROM ITSELF: Critical and Systemic Implications for Democracy by Janet McIntyre?-Mills (Ed.), first Volume of Churchman's Book Series, Springer 2005.

SIG 16: Information Systems Design

SIG Chair: Béla A. Bánáthy

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During the past century we have made spectacular advances in communications and computing technologies. It is clear that in this century, communications, storage, and processing capacities, as well as the human-machine interface will be developed to levels that are at present unimaginable. We have already greatly increased the surface area of human-machine contact. Perhaps more importantly, we are elevating the contact to increasingly higher levels abstraction. With many of the technical problems that constrained the information systems design efforts of the past having been solved, we can now focus more clearly on the systemic foundations of the design task. Papers addressing this general topic are invited. In addition, to lend more focus to the sessions, three themes are proposed:

> The conceptual foundations that inform the partitioning of tasks between human
> beings and machines (which, if any, tasks must remain in human hands and why?)

The implications, for democratic institutions, of alternative approaches to human-machine task partitioning;
Power and the internet.

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, ontological and ethical aspects of human-machine interaction.

Presentation Format: Contributors are encouraged to provide a brief (10-15 minute) overview of the key ideas followed by a more extensive discussion. We anticipate posting of the papers on the web prior to the meeting to provide a basis for discussion.

SIG 17: General Theory of Systems

SIG Chair: Len Troncale

lrtroncale@csupomona.edu

The ISSS GST-SIG embodies the original objectives of this society in their purest form, namely (1) to compare systems to discover processes that are similar (2) to enable transfer of useful fundamental knowledge between systems in order (3) to develop better theoretical models (4) for increased understanding of the unity of science.

We invite papers that identify, compare, or further develop several of the different schools of thought or general theories that are currently active or have historical significance. It is very important that the members of this society clearly distinguish between the various approaches and models that have been developed to date, who their caretakers are, and how they are being improved. We cannot help others if we do not understand ourselves. We also invite papers that conduct more detailed elucidation of any of the parts of these extant systems theories, that is, a paper can be tightly focused on one of the components of a general theory rather than on the theory as a whole. We also invite papers that compare and improve any of the tools and techniques used to study systems in general. Papers that reveal shortcomings of some extant theories or how theories that are now separate can be unified are also welcome. Any papers submitted to these sessions must exhibit the criteria of a general theory. If you do not know references that clarify these criteria, feel free to suggest such criteria. A discipline that does not have criteria that are useful in selecting among its output does not evolve and improve. This session will accept abstracts for platform presentation or for posters.

SIG 19: Medical and Health Systems

SIG Chair: Debora Hammond

hammond@sonoma.edu

The Medical and Health Systems SIG invites papers that address integrated approaches to health care and the current health care crisis, as well as connections between personal, social, and environmental dimensions of health. Of particular interest are papers documenting applied and community-based research and papers demonstrating a systemic approach to critical crises in health care.

Health and disease have implications in all layers of the living universe, from the sub-molecular level, through cellular, organismic, family, organizational and societal levels to the international level. We welcome papers that illustrate such a multilevel integration.

Medicine is an inherently systemic field that requires the integration of theory and empirical data from a variety of disciplines for its success. Perhaps one of the greatest needs confronting humanity is a more trans-disciplinary approach in dealing with the challenges of health promotion, and disease prevention and management.

Presentation Format: Authors will be asked to provide a brief (10 minute) overview of key ideas or findings from their research, leaving the remaining time for more interactive discussion among participants. PowerPoint or other media may be used to highlight important points, if desired, although more informal presentation styles are welcome and encouraged. The primary goal of this session is to facilitate dialogue and collaborative learning. We anticipate posting papers on the web prior to the meeting to provide a basis for discussion.

SIG 20: Living Systems Analysis

SIG Chair: James Simms

jrsimms24@msn.com

The missions of the Living Systems Analysis (LSA) Special Integration Group (SIG) are the development and application of living systems theory and science. LSA is one of the oldest and continuously operating SIGs in the society. Much has been accomplished in the development and application of living systems theory and science. Miller's living systems theory provides the basis for much of the living systems analysis associated with the SIG. Also, the fundamental principles of a living systems science, equivalent to those of the other natural sciences, have been developed.

You are invited to submit papers that deal with the conference theme (Complexity, Democracy, and Sustainability) from a living systems perspective. Also, papers linking living systems theory and science 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 extend living systems science and that apply the science.

SIG 21: Designing Educational Systems

SIG Chair: Patrick Jenlink

pjenlink@sfasu.edu

You are invited to submit papers that respond generally to the overall theme of "Designing Educational Systems for Complexity, Democracy and Sustainability" and specifically to ideas expressed in one of the questions that align with the 50th Conference and Annual Meeting of ISSS:
- What can the sciences of complexity teach us about educational systems design that is concerned with democratic practice, social justice and sustainability?
- What is the nature of the relationship between education, educational systems, and democratic consciousness?
- How do we educate future generations of citizens (local, national and global citizens) to manage information and make socially responsible decisions?
- How do we create and nurture educational systems that serve human needs while also protecting our resources (intellectual, aesthetic, moral, cultural and natural resources) for future generations?

The theme for the Designing Educational Systems SIG is focused on creating the human condition through designing educational systems that serve humanity and foster democratic civil society. Papers are solicited that fit within the following ideas:
1 Educational Systems Design as Social Discourse and Social Action – Designing educational systems that address issues of social justice, equity, and caring in the

context of growing diversity and globalization of society. Specifically, types/examples of social discourse, including dialogue, ethical, and design, and how these types of discourse are used in the creation and sustainment of educational systems that contribute to democratization levels of society.

2   Educational Systems Design in the Service of Sustainability – Examining how systems and educational scholars and practitioners–scholarly practitioners–can serve on the behalf of "sustainability" by seeking to create new relationships within and across boundaries of existing social systems, and/or addresses the potential of diversity and complexity in the solving of human problems. Research papers, philosophical position papers, and theoretical papers that reflect considerations for Education in the Service of sustainability particularly as related to educational systems design and creating alternative future possibilities.

3   Designing Democratic Educational Systems through Design – 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   The Complexity of Educating Society, Locally and Globally toward Democracy and Sustainability, through Educational Systems – Understanding the complexity of educational systems and role educational systems play in democracy and sustainability of national and global society. 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 sustainability of intellectual, aesthetic, moral, cultural and natural resources.

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 incorporated complexity and democracy to addressed social issues and cultural problems in ways that hold promise and potential for serving humanity's needs.

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 2006 Conference, Complexity, Democracy and Sustainability.

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.

Presentation Format: 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.

SIG 24: Human Systems Inquiry

SIG Chair: Arne Collen

acollen@saybrook.edu

Human Systems Inquiry (HSI) Special Integration Group (SIG) has a central emphasis on those Systems Sciences directly concerned with human beings. We invite you to contribute a paper

relevant to the conference theme that also pertains to human systems inquiry. Any paper making this connection will be considered. The purpose of the HSI SIG is to provide an arena for ISSS members to present, exchange information, learn, and discuss: 1) ideas and viewpoints concerning issues in systems methods and methodologies relevant to human beings and the human condition; 2) applications of systemic 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. Any one or more of these purposes may be related to the conference theme. For consideration, submit your abstract of 300 words maximum that includes at least one sentence relating the paper directly to the conference theme, and at least one sentence that connects your paper to any one or more of the four SIG focus areas stated above.

SIG 26: Critical Systems Theory and Practice

SIG Chair: Jennifer Wilby

j.wilby@hull.ac.uk

The special integration group in Critical Systems invites contributions for participation in its paper sessions at the 2006 annual meeting of the ISSS. This is a multidisciplinary and challenging area that represents an alternative to understanding current human, social, and political issues, from a mainly managerial perspective.

Its scope goes beyond the boundaries of traditional management sciences. On the one hand, it involves a reflection on issues emerging from current systems thinking and practice from contemporary philosophy (e.g., post-structuralism, critical theory, postmodernism), and other social disciplines. On the other, it also includes research that although systemic in orientation is mainly grounded in those disciplines.

Our aim is to take advantage of the multidisciplinary background and theoretical approaches of the participants, to generate a meaningful dialogue to inspire future research.

As a Critical Systems group we expect to be creative and innovative. Therefore, although the submission of a formal abstract and paper is expected, we would like to organise the sessions in accordance to the participants' needs and expectations. Please let us know of any suggestions about the topics, discussions or any other proposals as soon as possible.

For more information please contact Jennifer Wilby j.wilby@hull.ac.uk, at University of Hull Business School, The University of Hull, Kingston-upon-Hull, HU6 7RX, United Kingdom.

SIG 29: Evolutionary Development

SIG Chairs: Alexander & Kathia Laszlo

info@syntonyquest.org

We cordially invite you to join us at the 50th annual meeting of the International Society for the Systems Sciences (ISSS). Specifically, we hope you will consider contributing a paper and/or poster for presentation in the Evolutionary Development SIG (Special Integration Group) that it is our pleasure to co-chair. This will be the eighth year of productive meetings as an intact line of inquiry, the first four under the name of the Evolutionary Learning Community SIG, and the last three as the ED SIG. We will continue to focus our efforts on issues of timely relevance to which ELCs may best be dedicated.

Taken together (i.e., systemically), the conference theme, related guiding questions, and relevant sub-themes provide an exciting platform to catalyze the collective explorations of the ED SIG.

Inquiry in the area of Evolutionary Development involves revision of development notions and strategies, from a systemic and evolutionary perspective, in order to integrate the often isolated areas of human, economic, social, and sustainable development. Doing more with less, promoting living simply and meaningfully, and creating a sustainable economy where present and future human needs can be met without compromising the natural environment are some of the concrete objectives of Evolutionary Development. Evolutionary Learning Communities, as learning environments where people can learn together about the interconnected nature of our world, the ecological impact of our individual and collective choices, and the joy of finding a meaningful way to contribute to the emergence of sustainable and evolutionary futures, are the social units where Evolutionary Development can be set in motion for the ongoing self-organization of human societies in syntony with the planetary life support systems upon which they depend.

We invite both theoretical analyses relating to the principles and constructs of Evolutionary Development as well as presentation of explorations and practical applications that foster Evolutionary Development. This SIG welcomes treatment of themes that include, but are not limited to, consideration of the following topic areas:

- Human, social, and natural capital

- Self-directed sustainable development

- Community empowerment and participatory/anticipatory democracy

- Socio-ecological competence and the evolution of consciousness

- Design of ELCs as evolutionary guidance systems

- Evolutionary Systems Design as praxis

- Syntony as an organizing force in societal evolution

The ED SIG will be run as follows: During the conference itself, no formal paper presentations will be made, even though acceptance of both abstracts and full papers and/or posters is required. In order to be congruent with the general theme of the conference and the specific focus of our inquiry, our sessions will be conducted as learning conversations. Participants will engage first in a *generative conversation* in which they will have the opportunity to share the core ideas of their work with each other. After the group has attained a basic collective cognitive map of the research and constructs represented in the room, we will to move into a *strategic conversation* to identify areas of synergy. Once common themes and directions have been identified, we will move into an *evolutionary conversation* to create new knowledge and insights, and propose further collaborations. By way of background information in preparation for this event, we urge you to visit the historical webpages of the ELC SIG. Since the ED SIG is a descendent of the previous ELC SIG, the statements of goals, purpose, and history, as well as of topics, format, and focus all bear directly on the spirit of engagement in which the ED SIG will meet in Sonoma. The URL to visit is as follows: http://isss.org/sigs/sig29elc.htm Of course, if there is anything we can help clarify for you with respect to the above, please do get in touch with us.

For further information, please contact:

Alexander & Kathia Laszlo - Co-Chairs, ISSS ED SIG

U.S.A.: 810-A Quarry Road - The Presidio, San Francisco, CA 94129

Mexico: Cardenal 1310, San Andres - El Barrial, Santiago NL 67300

Tel/Fax: ++415/346.1547 (USA) Tel/Fax: ++81/82.66.81.86 (Mex)

eMail: info@SyntonyQuest.org || web: http://www.SyntonyQuest.org

For more information on the SIG, see SIG on Evolutionary Development

SIG 33: What is Life/Living?

SIG Chair: John Kineman

john.kineman@colorado.edu

Since 1999 the WILL SIG has explored many aspects of the question "What is Life" from intrinsic and extrinsic perspectives. In keeping with the theme of the 50th Annual Meeting, the WILL SIG invites papers regarding the relationship between complexity, ecosystems, and sustainability.

We would especially like to explore the question "what is an ecosystem?" in the context of defining life. What distinguishes an ecosystem from an organism? From a physical system? Related questions are:

1   What is meant by sustainability? How is it defined?
2   Are ecosystems "alive" or do they just contain life?
3   What is the best way to comprehend the living aspect of ecosystems?
4   Are ecosystems complex? If so, how?

Within this theme there are many more related questions. A boad focus will be applied in selecting papers, however they should be aimed at elucidating the internal nature of life (prefeably ecosystems).

SIG 34: Women and Children

SIG Chair: Anne Nelson

nelsongroup@comcast.net

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 always welcome. A special invitation is extended to those who would like to present papers on the sub themes of integration and continuity as they apply to women and children in community systems. Papers are invited from anyone who is interested in developing scholarship focusing on this area of study.

The focus of this conference is Complexity, Democracy, and Sustainability. Within these parameters papers are invited that expand the body of knowledge that pertains to the subject of Women and Children in Community Systems. ISSS administration has suggested the following questions as examples of questions that might begin the research into this subject.

What can the sciences of complexity teach us about social justice and sustainability? What is the nature of the relationship between information and consciousness? How do we manage information in a way that fosters effective decision-making processes? How do we nurture organizational structures that serve human needs while also protecting our resources for future generations?

The process of food production is a critical element of a healthy community system. A special post conference workshop is being offered titled, "Food Connections: Applying a Systems Approach to Develop Healthy Pathways from Seed to Table and Beyond".

We encourage papers that develop an understanding of the role of Women and Children in relationship to the production of food.

For further information, please contact: Anne Nelson Chair, Women and Children in Community Systems at: nelsongroup@comcast.net

SIG 35: Systems-Specific Technology

SIG Chair: Vadim I. Kvitash

Kvitash@hotmail.com

The great scientific and practical potentials of General Systems Theory as well as Systems Sciences have not yet been fully realized. We are still mostly ruminating about the initial concepts of von Bertalanffy and have not yet progressed to the level of an exact and complete scientific theory with its own language, ontology, epistemology, methodologies, tools and technologies.

The purpose of the Systems-Specific Technology SIG is to be instrumental in the development and in the implementation of systems-specific technologies/tools sufficiently effective for scientific and pragmatic application in various domains and across the boundaries of different sciences. These technologies/tools are expected to push the limits of human perception, cognition, communication, and will transform todays Systems Sciences to the level of the Exact Systems Science.

ISSS members are invited to contribute to the Systems-Specific Technology Session(s) to explore the following:
1 Defining Systems-Specific Technologies/Tools
2 Network Structures of Systems-Specific Relational Languages
3 Concepts and Methodologies for Developing, Constructing, Testing and Validation of different types of Systems-Specific Technologies/Tools
4 Systems-Specific Technologies/Tools: Established and Under Development

SIG 36: Organizational Transformation and Social Change

SIG Chair: Maurice Yolles

m.yolles@livjm.ac.uk

One interest of this SIG is seeing organisations as social communities, thereby allowing for a convergence between management systems/cybernetic theory and sociology. Another concerns the change imperative for autonomous organisations in a complex world (more on this can be found at the Journal of Organisational Transformation and Social Change). Abstracts are therefore invited from all fields of organisational or social systems research and/or practice.

The format for submissions should be as a normal academic paper. The content may be a balance between theory and practice or a theoretical paper. A paper directly totally towards practice may be better directed towards the SIG on Systems Applications in Business and Industry (SABI). In any case the two SIGs work closely together. If requested, papers published in these SIGs will also be considered for the Journal of Organisational Transformation and Social Change.

Presentation Format: This SIG follows a more conventional presentation format (as compared to that of the SABI group), with each author sequentially alloted 15 to 20 minutes for presentation.

SIG 38: Systems Science Basis for Systems Pathology and Systems Biology

SIG Chair: Len Troncale

lrtroncale@csupomona.edu

The new field of Systems Biology uses the vast amounts of reductionist data emerging from comparative panomics to study biological entities as systems (using knowledge of the parts to put Humpty Dumpty back together again). While systems biologists are using recent advances in network theory in their work, and at their conferences, they know little about systems science in general. For example, they are describing a new phenomenon they call "degeneration" but it is actually the same thing as "equifinality" that was described by Bertalanffy in the fifties. Nobel

laureate Edelmann in a recent plenary1 remarked that "reductionism is not enough" for the study of these new ideas and a physiology review2 recently criticized current research as "naïve reductionism."

The development of Systems Biology presents us with major opportunities for capturing funding and proving the worth of systems science by providing knowledge to the natural sciences. Funding levels of $34M to $100M are dedicated to establishing new Centers and Institutes for Systems Biology at major universities such as Harvard, Caltech, Berkeley, Johns Hopkins, Princeton, and the Claremont Colleges. There are already several different Systems Biology international conference series. But to capitalize on these opportunities, systems science must prove that it can provide "value added" insights and practical techniques to the natural sciences. We need exemplars of problems in systems biology that could be solved by application of knowledge gained from systems science and systems pathology.

The purposes of this third annual meeting of the Systems Pathology SIG are to invite (1) papers that summarize ideas, tools, or techniques of systems science that could inform systems biology, (2) papers that relate systems pathology to systems biology, (3) papers that show how advances in systems biology can contribute to systems science, and (4) papers that further develop systems pathology as a new discipline that could contribute to both systems science and systems biology. It should be noted that any advances in systems science of utility to systems biology/systems pathology would also be of utility to the systems neurosciences and earth systems science. This session will accept abstracts for platform presentation or for posters.

SIG 39: SIG for Students

SIG Chair: Nicholas Magliocca

nmagliocca@ucsd.edu

Students from approximately high school to post-doctoral age are cordially invited to join the second annual meeting of the Student SIG. This will take place at the 50th annual meeting in July 2006 of the International Society for the System Sciences (ISSS) held at Sonoma State University, Rohnert Park, California, USA. We hope that you will consider contributing a paper and/or poster for presentation in our group discussions. However, simply participating in the group's generative and creative dialogue is also appreciated and welcomed. The goals of the Student SIG include: to foster interest and excitement for the systems sciences among younger generations; share and articulate ideas from many different disciplines; and to synthesis a collected "youth" view of the Society's past, present, and future.

The theme of this year's conference is "Complexity, Democracy, and Sustainability" in an attempt to create connections of philosophy and practice across many varied fields. We will explore what fifty years of system science can teach us about the commonalities and patterns of complex problem-solving and the growing importance of sustainable solutions. As students, this year's theme will enable us to connect with members of our own generation so that we may discuss these complex issues within a systems framework.

It is my privilege to chair the second meeting of the Student SIG in an effort to meanifully connect younger generations in the exploration of the systems science approach. What makes this SIG unique, is the oppotunity to integrate many varied disciplines and backrounds into a student presence within the ISSS. Distinguished members of the society will also be invited to come speak to our SIG to futher present their ideas. It is essential that youth participation be established in order to introduce youth to the workings of the ISSS, to create a contributing student membership, and to perpetuate the work of the ISSS in the future.

The meetings of the Student SIG will be conducted in much the same manner as the Evolutionary Development SIG, chaired by Alexander and Kathia Laszlo. There will be no formal presentations

of papers/posters, but rather a brief period for the day's presenters to familiarize the group with their work. Triggering questions will be created beforehand in order to give the disscussion a focus. After allowing for a brief question period, we will proceed to a strategically guided discussion. An evolutionary dialogue will take place in which new insights may be constructed and further collaborations made possible.

The best preparations for these meetings will be to read the papers scheduled for presentation, take part in outside conversations during the various workshops and plenaries, and come with enthusiam for a new youth collaboration!

Presentation Format: Brief presentaitons by authors, followed by strategically guided discussion

Exploratory Groups and Forums

The following are not officially designated Special Integration Groups by the ISSS, but may host papers or provide presentations or discussion around topics of interest to members.

18.1 Systems Approaches in Arts-Informed Inquiry

Chairs: Lezlie Kinyon & Bela A. Banathy

isss06lezlie@yahoo.com and babanathy@sbcglobal.net

Arts-informed inquiry is interdisciplinary and integrative. It incorporates the questions of validity, legitimacy, and significance of traditional approaches as well as the questions of meaning and function that an artist asks in approaching work. As Max van Manen (1990) suggested, a researcher must, at times, discover or invent a methodological approach sufficient to the subject under research in order to create an energetic response. Coupled with a systems approach, arts-informed inquiry has the potential to create a rich corollary to the Aristotelian episteme in science research. Arts-informed inquiry allows researchers to tackle elusive subjects such as the search for wisdom or our roles as thinking and aware beings within nature's complex web. It allows for the disciplined process of inquiry to be foremost in subjects of a personal nature such as gender identity or dreams and consciousness. The group will explore, through traditional academic papers and the approaches found in the arts, two parallel and equal "tracks" of inquiry: art-as-inquiry and arts-informed inquiry that utilizes the tools of the arts in science research.

Abstracts will be necessary for each type of presentation, just as for papers for the conference. Presentations may take many forms, from musical composition, performance work, visual art, and story-making, to academic papers of the more traditional variety. The chairs encourage an integrated approach involving both. All papers and performances must adhere to the spirit of inquiry in the systems sciences.

For 2006, this group will meet in the Conference Gallery and an announcement will follow from the planning committee regarding showing your work.

For further information and published references please contact Bela A. Banathy, Ph.D. and Lezlie Kinyon, Ph.D.

18.2 General Evolution Research Group

This Forum features papers and discussion by members of The General Evolution Research Group (GERG), but is not limited to members. It centers on the theme, suggested by Ervin Laszlo, of a "decision window" within which fundamental changes must be made if global economic/social/ecological crises are to be averted and crisis-oriented trends turned around. This topic is loosely tied

to Laszlo's forthcoming book from Hampton Roads, THE CHAOS POINT: The World at the Crossroads (or Seven Years to Avoid Global Collapse and Promote Worldwide Renewal). We request a web forum prior to the Sonoma meeting on which to post papers and conduct discussions in preparation for the actual gathering.

18.3 Gregory Bateson Forum

This Forum encourages a celebration and discussion of Gregory Bateson's work and legacy broadly focused around the four central conference themes: (1) Complex Systems and the Roots of Systems Thinking; (2) Self-Organization and Living Systems; (3) Ecological Systems and Sustainability; and (4) Social Systems Design and Practice.

Visit the web forum, which will be used prior to the Sonoma meeting to post papers and conduct discussions in preparation for the gathering.

18.4 The Design of Economic Systems in a Service Economy

There is a general consensus that the advanced economies are evolving from an industrial manufacturing base to a service base. However, there has been little exploration of the implications of this transformation for describing and designing economic systems as systems. This symposium will focus on the need to redesign monetary and financial services systems/institutions in the light of the emergence of service economies.

A central question is how to accelerate or amplify the value-creation potential of people in services. This symposium will explore what we currently mean by services and what is the best method to describe, explain, and implement them. On a general level, the focus is on the notion that human thought and interaction is itself an intrinsic source of value, but that the value-creating potential of human relationships has never been as explicit as more tangible sources of value, such as material goods and energy resources. Evidence for this includes a growing interest in accounting for the economic value of human capital as well as sub-economies of celebrity and prestige that are leveraged in areas such as entertainment and politics, where obvious high levels of real value are created on the basis of projections of certain human characteristics. These phenomena suggest ways to reconceptualize and redesign basic monetary and financial services institutions along lines that might give rise to an economy of abundance alongside the traditional economy of scarcity.

This symposium is focused on asking the right questions. The basic question seems to be about whether and how it might be possible to unleash alternative sources of value into the world's economy through recognition of the value of human innovation and relationships. This leads to questions of methodology, in terms of how to study such issues. It also leads to a network of related questions about the meaning of value, the influence of psychology on economic systems, relationships among political, economic, legal, environmental, educational, ethical, esthetic, cultural, technological systems, and others.

Presentation Format: To express an interest in participating in a panel that will introduce this topic at the symposium, please submit a one-page position statement that articulates what you consider to be the right questions to be asking about this subject, at this time. The organizers will create a summary of this input to be included in the proceedings. This is not meant to discourage full-length papers on this subject for possible separate inclusion in the proceedings.

For information or to submit position papers, please contact:

Art Warmoth & Doug McDavid

Artwarmoth@aol.com

mcdavid@us.ibm.com

18.5 Aging Systems: An Integrated Study of Humans, Organizations (Corporations) and the Universe

Chair: Daniel Hershey

Daniel.Hershey@uc.edu

The aging process is, of course, a universal phenomenon. And for living systems (humans), the end result is death, the universal attractor. For so-called inanimate systems such as corporations, they need not die, but many do. And what of the universe, perhaps our largest and most important system? Aging theories abound, from wear and tear, free radical, autoimmune, finite potential, to those driven by thermodynamics, incorporating the ideas of Ilya Prigogine and Claude Shannon.

Abstracts are invited, for work dealing with "lifespan and factors affecting it", "must we grow old", and "entropy, infinity, and death"- for humans, or corporations, or the universe.

Presentation Format: Presentations at the meeting will be twenty minutes each, with 10 minutes for discussion with the audience (for a total of 30 minutes for each presenter). After this, an open forum will take place, with presenters and the audience freely interacting.

For more information, please contact Professor Daniel Hershey by e-mail, at the University of Cincinnati, USA. Or go to his web site to see his work involving aging systems (www.basaltech.com).

18.6 Systems Education Paper Session

Chair: Len Troncale

lrtroncale@csupomona.edu

In the seventies and eighties there were a dozen or more departments, centers, and institutes that offered degrees in systems science or general systems studies at various levels. The ISSS sponsored compendia that listed and compared these programs for the use of students who wanted to study and earn degrees in such programs. Over the last decade, some of these programs were terminated so these compendia are now outdated. Because of the renewed interest in studying systems and systems applications, it may be timely to once again organize sessions with the purpose of presenting and comparing the offerings of systems education programs that remain in existence or are just forming. Since such information is of growing importance to the field of systems science and to the pipeline of specialists preparing for careers in systems science, perhaps the formation of a SIG on Systems Education Programs is now needed and would be of great interest and utility to our members and SIGs? such as the Student SIG.

It is important to distinguish the objectives of this proposed SIG from the active, existing SIG on Designing Educational Systems. The latter has a distinguished and productive history of using systems tools and ideas to organize better conventional public and private educational programs on all subjects at all levels. While their guidelines should also be used to deliver systems science education, this SIG would focus on those programs that prepare systems scientists for a career in systems science per se, not on better design of educational systems in general. For the purpose of this session we will define systems science education in the broadest possible terms, from the natural sciences, to engineering, to systems simulation and modeling, to complex systems, to systems applications domains.

We invite papers that (1) present details on a single systems science education program, (2) compare the details of different systems science education programs, (3) provide a history of the fate of past systems science education programs as lessons for the future, (4) propose foundation of new systems science education programs, (5) report on recent changes or improvements of systems education programs, (6) better define the components required for a curriculum in systems science, or (7) review lists, collections, or workbooks of the past and present on systems education programs. This session will accept abstracts for platform presentation or for posters.

18.7 Session on Global Agoras

Chair: Ken Bausch

ken@globalagoras.org

People interested in community (agora) building are invited to a session on this topic featuring short presentations and serious dialogue.

We will discuss how we might create communities of dialogue and action that communicate and bolster each other. Talks are welcome on real or intended projects, methodology, and opportunities. Comments are welcome from everyone.

If you want to present in this session, please submit a description of your topic as an abstract through the regular conference process. (No final paper will be required.)

If you are interested in a Spanish-speaking session on agora-building, please contact Ken Bausch directly at the address listed.

Presentation Format: Ten minutes is the maximum length of your presentation. Expect 15 minutes of Q & A and dialogue.

18.8 Scholarly Session on Terror, Torture, Secrecy, Propaganda, Democracy, and Peace Development

Chair: Carl Slawski

cslawski@juno.com

This session will have a special preference for papers oriented to fundable research hypotheses and possible proposals to agencies of international scope, including analyses of the sources of human rights abuse implicit in the standard operating procedures of multi-national corporations, perhaps in comparison with the motives of insurgents to kill innocent, noncombatant persons.

Presentation Format: For the benefit of the audience in this scholarly session, full papers or charts may be distributed at the start, and should be summarized orally within ten minutes each, followed immediately by up to ten minutes of discussion on the paper just given, or on discussion questions prepared by the author, and at the end by a general discussion that attempts to relate all papers in the session to larger issues, preferably oriented toward positive solutions or future, possibly fundable empirical or philosophical, i.e., general systemic research. Preparation of easily movable graphic display sheets or posters as reference outlines for possible later discussion are encouraged.

To avoid possible problems with reading e-mail attachments or insertions, after the abstract is accepted through normal channels, a duplicate hard copy of the abstract and full paper may be sent along with a copy on floppy disk (preferably in WORD format) by regular air mail postal service to 555 South Ventu Park Rd., Newbury Park, CA 91320, USA.

18.9 Integrative Study Session on Terror, Torture, Secrecy and Peace

Facilitator: Carl Slawski

cslawski@juno.com

This part is an invitation to the session rather than a Call for Papers, per se. Subtopics: Shame (unacknowledged), Envy, Corporate (and Government) Greed, Prejudice, Terror Motives, Torture, Secrecy, Propaganda, Democracy, and Peace Development.

Presentation Format: The guidelines, with procedures developed by Joe Engelberg (1994, *The Nature of Integrative Study*, Stillwater, OK, New Forums Press) require leaving all footnotes and

academic baggage at the door, speaking briefly and without interruption, one person at a time, only in a collegial manner, from the heart and from personal life experience. The approach needs no advance preparation. The subtopics (listed above) will be broken into "framework statements," such as maxims or proverbs, selected in advance by the facilitator, will be distributed by the facilitator or session guide at the beginning of the discussion session, but not before. The purpose overall of such sessions is to mine the collective wisdom of participants without the interruptions, complication, or confusion introduced by the verbosity of many typical academic or scholarly presentations.

18.10 Foundation of Information Science

Co-Chairs: Søren Brier: sbr.lpf@cbs.dk

Béla A. Bánáthy: babanathy@sbcglobal.net

Jed Jones: jed_c_jones@yahoo.com

The Foundation of Information Science (FIS) Research Group invites papers in the broad sense of the topic. Additionally, building upon the work of the past few years, we encourage consideration of the possibilities and limitations in the informational approach to communication, mind, nature and evolution. The FIS work should be of value to everyone who has an interest in what it means to found our worldview and epistemology on a theory of information being equal in importance to the theories of energy, matter, space and time. Does the informational approach help us to better formulate theories of emergent evolution, cognition, consciousness and communication? Are the systems and cybernetically based informational theories, such as Bateson's for instance, sufficient to make theories of intentionality, signification and meaning in cognition and communication of signs and language? Or, is it necessary to integrate phenomenological, hermeneutical and semiotic theories to get to that Transdisciplinary theory of "Mind and Nature" at which Bateson was aiming? Can the dynamical patterns of nature, as viewed through a process dynamic perspective, be seen as linguistic dynamics? Is information theory deep enough to describe language? Are theories of information compatible at all with autopoiesis and second order cybernetics?

Presentation Format: Contributors are encouraged to provide a brief (10-15 minute) overview of the key ideas followed by a more extensive discussion. We anticipate posting of the papers on the web prior to the meeting to provide a basis for discussion.

18.11 Agent-Based Social Systems Science

Chair: Kyoichi (Jim) Kijima

kijima@valdes.titech.ac.jp

This session aims at tackling economic, organizational, and social problems in terms of collective decision making by a large collection of autonomous and heterogeneous agents. It covers broader spectrum of system sciences, including social systems theory, sociology, business administration, management information science, organization science, computational mathematical organization theory, economics, evolutionary economics, international political science, jurisprudence, policy science, and socio-information studies.

18.12 Poster Presentations Concerning "The role of systems theory in global climate change."

Contact: Debora Hammond

hammond@sonoma.edu

The format for this session is that each presenter will bring a poster describing in chart or other graphic form the essence of his/her contribution to the general topic of how systems theory(ies) can or do inform an issue in the area of global climate change. Each person bringing a poster will have five minutes to articulate to the rest of the group the main points on the poster. After the presentations have been made, the attendees will have time to look at and discuss each other's posters.

Eight to ten posters will be selected for presentation. The following list is suggestive of the types of topics that could be included in this session:
   - The role/effect of positive and/or negative feedback loops
   - The influence of GCC on social, economic and/or political systems
   - The impact of uncertainties in data, modeling, etc. on systemic predictions
   - The effectiveness of proposed mitigations
   - Ecological changes as proof or consequences of GCC
   - The construction and validation of GCC models
   - Linear vs. abrupt models of GCC
   - Identifying the relative influence of forcing mechanisms

18.13 A Daily Reflective Roundtable for All ISSS 2006 Participants

Session Chair: Susan Farr Gabriele

sgabriele@gemslearning.com

Everyone is invited to our sixth annual morning Roundtable to take place in Sonoma, California. It will be an hour daily, from 7:30 to 8:30 am, July 10-July 15, Room (To Be Announced). Join us every day, or whenever you like!

Our Roundtable purposes are to open a space for daily reflection on our ideals, that is, what we want to learn and create; to increase time for each of us to talk from our hearts and minds about what we are thinking, experiencing, and learning now; and to be listened to by the others in the group, enjoying and learning with each other in a new way. To make our purposes and format transparent, we will have the Roundtable guidelines on each chair for easy referral.

Our format is: We spend 5 minutes listening to short readings: e.g., the Roundtable guidelines; We then spend 55 minutes on individual reflections or learning reports, time distributed equally among all present (e.g. 27 people = about 2 minutes each). Our suggested topic for the first morning might be: "What situations and projects did you leave behind to come here, and what could happen here that would be valuable to you, here, or in your work or life back home?" Each day, a different topic will be suggested by a different volunteering facilitator of the day.

Folk wisdom and compelling research indicate that participants experience surprising benefits from this activity after about four sessions. Our experience with this format has resulted in the following theory: Just as we break the sound barrier when we travel faster than the speed of sound, we can break the communication barrier when we hear 25 authentic viewpoints in 50 minutes.

The systems rationale for our format is the following. Bureaucratic models assume all parts of a social system are designable. Laissez-faire models assume no parts are designable. Boulding organizes the systems of the world from simple to complex for a "systems" model of a social system (in Figure 1). He clarifies that certain parts of a social system (frameworks, clockworks, thermostat-like systems) are designable to externally-prescribed criteria. Other parts, human, (open, blueprint,

image-aware, symbol-processing) are not designable. They act according to internally-prescribed criteria—self-determined needs, perceptions, choices—of increasing variability. Therefore, the Roundtable scripts and timing are tightly designed to leave maximum time for variable individual comments.

OTHER CONFERENCES

The Summit on Systems Biology
March 29 – 31, 2006
Richmond, Virginia

The Summit, which is sponsored by several academic centers as well as the AACC (American Association of Clinical Chemistry), will provide course accreditation and will be held on March 29 - 31, 2006 at The Jefferson Hotel in Richmond, Virginia. The agenda includes three educational blocks which are titled: 1) Computational Biology; 2) Genomics and Proteomics; and 3) Complexities in Biological Systems

Summit Co-Chairs <http://www.systemsbiologysummit.com/>

For further information contact: Donna J. Edmonds, Conference Coordinator

<http://www.systemsbiologysummit.com/>

Workshop on the Evolution of Complexity
June 3rd, 2006
Bloomington, IN, USA
http://ecco.vub.ac.be/ECO/

as a part of the Tenth International Conference on the Simulation and Synthesis of Living Systems: ALife X http://www.alifex.org

The evolution of complexity is a central theme in Biology. Yet it is not without any ambiguity. Complexity has been used to refer to different things. For instance, complexification has been interpreted as a process of diversification between evolving units or as a scaling process that is related to the idea of transitions between different levels of complexity. Other meanings of complexity have been introduced, both inside and outside the realm of Biology. What concerns most researchers is to get insight into the mechanisms that produce their notion of complexity.

The focus of this workshop will be on biological interpretations of complexity and the driving mechanisms: primarily we want the focus to be on evolutionary and related dynamics as mechanisms for producing complexity. Furthermore, we want to bring together historical and novel research in this context.

Submission deadline: February 28th, 2006
Notification of acceptance: April 1st, 2006
Camera-ready papers due: April 15th, 2006
Workshop date: June 3rd, 2006
For further information, contact

Websites:
 Workshop: http://ecco.vub.ac.be/ECO/
 Conference: http://www.alifex.org

Sustainable Development of Humankind
Course (March to June 2006)

Around 40 hours self-engaged in conceiving, building and maintaining a way where humans may learn what they must know for LEARNING how to CIVILIZE each one in order to respect the natural integration, of every terrestrial circumstance.

An event structured in accordance with views expressed by Ludwig von Bertalanffy, Kenneth Boulding and Anatol Rapoport who led the constitution 51 years of the Society for the Advancement of "General Systems Theory" (Allgemeine Systemlehre) in a Session of AAAS

For further information, contact: elohimjl (Elohim Jimenez Lopez)

Vice president of Ludwig von Bertalanffy Center for the Study of Systems Science, Vienna, Austria elohimjl@gmail.com

6th International Conference on Complex Systems (ICCS)
June 25-30, 2006
Boston Marriott Hotel in Quincy, Massachusetts

This conference has two major aims: first, to investigate those properties or characteristics that appear to be common to the very different complex systems now under study; and second, to encourage cross fertilization among the many disciplines involved.

For information on abstract submission and registration: http://necsi.org/events/iccs6/

EURO XXI 2006
21st European Conference on Operational Research
July 2-5, 2006
Reykjavik, Iceland
OR for Better Management of Sustainable Development

* European conference with international flavour
* First EURO conference in a Nordic country since Finland 1992
* Exotic nature, glaciers, volcanic lava and waterfalls
* Excellent conference facilities
* Good organisation
* Relatively low cost
* Midnight sun

Systems Dynamics 2006
July 23 - 27, 2006
Nijmegen, The Netherlands

Hosts: Methodology Department, Nijmegen School of Management, Radboud University Nijmegen, The Netherlands

For further information, contact: Conference Manager, Roberta L. Spencer, Executive Director, System Dynamics Society, Milne 300 - Rockefeller College, University at Albany, State University of New York, Albany, New York 12222 USA

Phone: +1 (518) 442-3865   Fax: +1 (518) 442-3398

E-mail: system.dynamics@albany.edu

International Seminar in Spanish on "Transdisciplinar Systemics"
3-6 August 2006
Rio Hondo, Santiago del Estero, Argentina

Galileo Galilei Institute on behalf of the Argentine Foundation for Talent and Ingenuity (AFTI). Location: R'o Hondo Lake, Santiago del Estero, North of Argentine

Organized by Instituto Galileo Galilei and FundAr Ingenio, chaired by Mercedes Clusella and Pedro Luna.

For further information, contact: Maria Mercedes Clusella (mercedesc@arnet.com.ar)

http://projects.isss.org/Main/ALAS

www.FundArIngenio.net

info@FundArIngenio.net

SIS.TRH06@FundArIngenio.net

First Regional Meeting of ALAS
Latin American Association of Systems
7-9 August, 2006
Buenos Aires, Argentina

Organized by GESI, Grupo de Estudios de Sistemas Integrados (Argentine Chapter of ISSS) and the local YMCA (in charge of international participants logistics). Local organizing committee: Ernesto Grun, Charles Francois and Enrique G. Herrscher. Further information: http://www.intelligentsystems.com.ar/eventos/seminario/GESI/gesi.htm; on travel & lodging: http://www.ymca.org.ar

2006 - UKSS
10th International Conference
11th - 13th September, 2006
St Anne's College, Oxford University, UK
Effective change - The Contribution of Systems Theory and Practice

Call for Papers & Other Contributions: Contributions to the conference may be on any topic relevant to the conference theme, including, but not restricted to:
* New systems theory, models and methodologies
* Systems thinking in general problem solving
* Systems ideas applied to world problems
* Using systems ideas in organisations
* Systems thinking in personal life
* Promoting and teaching systems ideas
* Commercial exploitation of systems ideas
* Limitations of systems theory and practice
* Assessing the value of systems ideas

Contributions can take a number of different forms:
* Full technical papers
* Short discussion papers
* Doctoral summaries
* Poster presentations
* Panel proposals
* Master Class/Tutorial proposals

Full technical papers should be about 5000 words. All other submissions should be around 1000 words. Submissions should be made by e-mail, in Word or .pdf format, to k.howell@manchester.ac.uk.

Deadline: 3 April 2006: all submissions (full technical papers; short discussion papers; doctoral summaries; poster presentations; panel proposals; and master class/tutorial proposals)

For further information, contact: Ian Roderick (ian@schumacherinstitute.org.uk)

OR48
Operational Research Society, UK
September 11-13 2006
University of Bath, Bath, UK

We want to maintain the reputation of the Annual Conference by attracting presenters from a wide range of backgrounds and organisers are being sought for the following streams:
Applied Queueing Theory
OR and Multiple Methods
Asset Management
Public Utilities
Game Theory
Research Assessment
Knowledge Management
Reflective Practice
Logistics & Supply Chain Management
Transport
Manufacturing
Tutorial / State of the Art Reviews

For further information, contact: Chris Barrett at The OR Society either by e-mail barrett@orsoc.org.uk or by telephone on +44 (0) 121 233 9300

The 7th International Symposium on Knowledge & Systems Sciences
September 22-25, 2006
Beijing, China

KSS'2006 is the annual meeting by the International Society of Knowledge and

Systems Sciences (http://www.jaist.ac.jp/iskss/).

Scope of KSS'2006: The presentations and papers at KSS2006 are expected to cover but not limited to the following areas:
- Creation of agent-based social systems sciences
- Cross-cultural learning on systems thinking and knowledge management
- Complex system modeling and analysis
- Knowledge creation: creativity support, awareness support, etc.
- Knowledge discovery: data mining, text mining, other statistical methods, etc.
- Knowledge systems engineering
- Meta-synthesis and advanced modeling
- Social network analysis and knowledge management
- Systems methodology for knowledge integration and creation
- Web intelligence tools

If you have further inquiries, please contact Dr. Xijin TANG via kss2006@iss.ac.cn

Academy of Management
www.aom.pace.edu
Critical Perspectives on Information Systems (IS) Research
10-16 August, 2006
Atlanta USA

Stream Description

Two years ago in the annual meeting of the Academy of Management (2003), a small community of researchers gathered to share their experiences in doing critical research in information systems. The purpose of this workshop stream is to continue building such a community and facilitate the inclusion of new members. Once more, we intend to bring people together to learn from each other and to identify key issues for research and publication in this area.

Information systems are now necessary elements of organisational life. Dominant rationalities of managerialism and efficiency (now disguised as collaborative IS design) seem to continue to be a dominating discourse in IS research. However alternative perspectives remain. In particular, there is an emerging interest in using ideas from critical theory, critical management studies and systems thinking to provide alternative ways of conceptualising, designing, implementing and using information systems. The internet and other virtual spaces can also provide opportunities to develop new conceptualisations and approaches that inform information systems practice. There is a need to develop ways of approaching IS practice from the contributions of these different areas.

For the critical management studies special interest group of the academy, this workshop offers the opportunity for those researching in information systems to exchange ideas and discuss in depth the work of others in this area.

Possible Areas of Discussion:
    Is there any value in critical approaches to IS research?
    New approaches to facilitate critical reflection in planning, design and implementation of information systems.
    Problematics of developing critical approaches to IS research.
    Critiques of 'managerialism' and the use of internet-based technologies.
    Critical explorations of surveillance and control with information systems
    Alternative perspectives on the adoption and use of enterprise resource planning (ERP) systems or other systems.
    Contrasts between modernism and postmodernism in IS research.
    Novel sources of theoretical insight for critical research in IS.

Papers submitted and presented to the workshop can also be submitted and presented to the main Academy conference.

For further information, contact Conveners:

Dr. Jose Rodrigo Cordoba (University of Hull, UK), Hull University Business School, Cottingham Road, Hull (UK), HU6 7RX, Email: j.r.cordoba@hull.ac.uk

Dr Carole Brooke , Lincoln Business School, University of Lincoln, Brayford Pool

Lincoln (UK), LN6 7TS, Email: cbrooke@lincoln.ac.uk

Please email your contributions, questions or comments to Jose-Rodrigo at j.r.cordoba@hull.ac.uk

"Prospective of Systems Thinking, Cybernetics and Information"
Mexico City (2006)

For further information, contact: international coordinator: elohimjl (Elohim Jimenez Lopez), Vice president of Ludwig von Bertalanffy Center for the Study of Systems Science, Vienna, Austria. elohimjl@gmail.com

3rd International Workshop on Complexity and Philosophy
22-23 February, 2007
Stellenbosch, South Africa

Co-Hosted by: ISCE Events, University of Stellenbosch, Cathedra for the Study of Complexity (Instituto de Filosofia de La Habana)

First Call for Papers

I am writing to you today to inform you about the upcoming two-day Complexity and Philosophy workshop to be held next February (2007) in Stellenbosch, South Africa and co-hosted by the Institute for the Study of Coherence and Emergence (http://www.isce.edu), University of Stellenbosch, and the Cathedra for the Study of Complexity (Instituto de Filosofia de La Habana). As with previous meetings, the aim of this workshop is to explore the considerable philosophical implications of the fledgling science of complex systems.

Potential attendees are encouraged to submit papers on the following topics:

Status, limits and legitimacy of knowledge regarding complex systems

Relationship between linear and nonlinear philosophies

Complexity-based ethics

Frameworks for the analysis of complex systems

Complex limits to theories of everything

Complexity and the social sciences

Complexity and globalization

Complexity and human subjectivity

Deadlines:

Please let Caroline Richardson (stellenbosch2006@isce.edu) know of your interest in attending this event as soon as possible. Attendance at the event will be strictly limited to 30 so as to encourage genuine dialogue amongst participants - selection of attendees will be determined simply on a first come first serve basis (with an additional consideration of paper relevance).

Extended abstracts of around 1000 words to be submitted to Dr. Kurt Richardson (kurt@isce.edu) by end of May, 2006.

If you have any questions at all please do not hesitate to contact Kurt or Caroline (stellenbosch2006@isce.edu).

EURO XXII
The Association of European Operational Research Societies
July 9-13, 2007
Prague
OR Creates Bridges

The 22nd European Conference on Operational Research EURO XXII will be organised by the Czech Society for Operational Research in cooperation with the University of Economics, Prague. The Conference will be held in the campus of the University of Economics which is situated very close to the Prague historical centre.

Prague with its astonishing architecture, history and cultural heritage, numerous theatres, concerts, cosy restaurants and pubs attracts an increasing number of visitors every year. Here you can visit places where Mozart, Smetana, Dvor‡k composed and conducted their music, where writers like Kafka, Seifert and Kundera found an inspiration for their works.

For further information, contact: http://euro2007.vse.cz

Tokyo 2007
The 51th Annual Meeting of the International Society for the Systems Sciences
Tokyo Institute of Technology, Tokyo, Japan
August 2007

Kyoichi Jim Kijima, ISSS President 2006-2007, kijima@valdes.titech.ac.jp

For further information: contact the ISSS Office at isssoffice@dsl.pipex.com

SECTION THREE
ISSS BUSINESS

NOTICE OF UPCOMING ISSS MEETINGS

The annual membership, council and board meetings willbe held during the annual conference at Cancun, Mexico during the week of 9 July to 14 July 2006.

MINUTES OF ISSS BOARD OF DIRECTORS MEETING

Saturday, July 2, 2005 in Morelos Room at Westin Regina Hotel, CANCUN, Mexico.

Called to Order 7:12 p.m.

Present: Herrscher (Chair), Bailey, Hammond, Ing, Simms, Slawski, Troncale, Wilby, Yolles.

Visitor: G. Metcalf. Absent, B.A. Banathy (Interim VP for Funds).

1. Inactive SIGs were considered for continuation or termination (Wilby).
   Co-Futura will be deleted from the list of SIGs: Unanimous.
   Duality will be put on one-year probation: Unanimous.
   Informatics will be deleted. Unanimous.
   Medical will be kept on the list. Unanimous. [D. Hammond will be interim chair for the near future.]
   Processes and Human Processes will be deleted. Unanimous
   The name of the Evolution and Complexity SIG will be changed to Systems Biology and Evolution, and be continued as in interim exploratory group, perhaps bringing in aspects of the Complex Systems grouping. Unanimous.
   Letters will be sent to prior or reorganizing SIG chair. Unanimous.

2. The journal E:CO was approved for its editor's offer to give discounted rates to ISSS members. Unanimous.

3. A copy of the formal agreement with Wiley, the publisher Systems Research and Behavioral Science, will be requested for further consideration. Unanimous

There was extended discussion of planning for this and other annual meetings with regard to lessons learned.

Adjourned: 9:45 p.m.

These minutes have not yet been approved.

Respectfully submitted by Carl Slawski, Secretary.

MINUTES OF ISSS COUNCIL MEETING

At Westin Regina meeting room, Sunday July 3, 2005, Cancun, Mexico.

15 voting members present: Hammond (Chair), Herrscher, Bailey, Finlayson, Gabriele, Ing, A. Laszlo, K. Laszlo, N. Magliocca, M. Jackson, Simms, Slawski, Swanson, Troncale, Wilby; 2 observers: B. Hilton, L. Tracy.

Called to Order 5:45 p.m.

Announcement: A summary of the motions of the ISSS Board of Director's meeting of Saturday July 2, 2005 was presented.

There was general discussion of the importance of SIG (and Chapter) activity, how to parcel out substantive components across SIGs, how to get SIG chairs active in recruiting members and stimulating participants (to prepare papers or dialogue sessions), clustering or joint activities or sessions involving two or more SIGs at a time, the need for a clear description of the content area of each SIG for the web site, the need for each SIG to write an annual report for the Bulletin, SIG chairs to review each paper submitted for the annual meeting. The question of whether a session at the annual meeting will be oriented toward dialogue vs. the traditional reading of papers followed by brief questions.

New Business:

MOTION (G.A. Swanson): Pursuant to Section 6.3 of the bylaws and on behalf of the Board of Directors, the VP for Administration submitted the 2005-2006 Budget (as previously published in the Bulletin) for approval by the Council. Unanimous.

Adjourned: 6:15 p.m.

These minutes have not yet been approved.

Respectfully submitted by Carl Slawski, Secretary

MINUTES OF ISSS MEMBERSHIP MEETING

At Westin Regina meeting room, Sunday July 4, 2005, Cancun, Mexico.

Called to Order 3:00 p.m.

Announcement: Summaries of the motions of the ISSS Board of Director's meeting of Saturday July 2, 2005 and Council meeting of July 3, 2005 were presented and discussed.

Adjourned: 3:45 p.m.

CONFERENCE ISSS2005 FINANCIAL REPORT

Category	1/1/05 - 12/31/05
Inflows	
Conference Income	33846.42
Credit from Westin	2700.00
Loan from ISSS	5000.00
Total Inflows	41546.42
Outflows	
Repay Loan from ISSS	5000.00
Audio Visual	5724.00
Bank Charges	1435.93
Events	9196.74
Gifts	90.89
Office costs	1097.89
Publications	3663.92
Speaker Accommodation	5186.00
To ISSS Office (Memberships, Journals)	9237.00
Vickers award	630.00
Total Outflows	41262.37
Surplus to ISSS office	284.05
	41546.42

CASH ACCOUNTS ISSS JAN-DEC 2005

Balance December 31 2005			$58,121.91
Income			
Membership	$8,848.00		
Member/Other	$233.75		
Conf Memberships	$9,237.00		
Repay Cancun Loan	$5,000.00		
Surplus from Conference	$284.05		
Interest on CD	$991.76		
Total Income		$24,594.56	
			$82,716.47
Expenses			
Loan to Cancun Conf.	$5,000.00		
Bank charges	$587.67		
IFSR (3 years)	$300.00		
2005 CDROMs (half share)	$1,464.00		
Journals	$9,391.73		
Printing	$1,571.50		
Internet / Computer	$1,634.01		
Office costs	$1,501.01		
Postage	$1,650.88		
Loan to Sonoma Conference	$7,700.00		
Society Registration	$20.00		
Total Expenses		$30,820.81	
Ending Balance			$51,895.66

Bank Balances

UK Sterling	$5,931.28
UK Dollars	$11,483.23
USA ISSS Trustees	$34,085.15
USA ISSS Corporate	$396.00
Total Cash	$51,895.66

SIG ANNUAL REPORTS

List of Active SIGs and (Report Received)
Business Industrial Systems Applications (NO)
Hierarchy Theory (NO)
Duality Theory (NO)
Systems Philosophy and Systems Ethics (YES)
Systems Modelling and Simulation (NO)
Futurism and Systems Change (NO)
Meta-modelling and Systems Epistemology (NO)
Systems Psychology and Psychiatry (NO)
Information Systems Design (NO)
Research Towards a General Theory of Systems (NO)
Medical and Health Systems (NO)
Living Systems Analysis (YES)
Designing Educational Systems (NO)
Spiritualty and Systems (NO)
Human Systems Enquiry (YES)
Critical Systems Theory and Practice (NO)
Evolutionary Development (NO)
Evolution and Complexity (NO)
Applied Systems and Development (YES)
What is Life/Living (NO)
Women and Children (NO)
Systems Specific Technology (YES)
Organizational Transformation and Social Change (YES)
Systems Pathology (NO)
Student SIG (YES)

The following SIG reports have been received.

Applied Systems and Development
Dennis Finlayson

The SIG's activities were confined to the Conference, though there was continual contact throughout the year with a wide range of ISSS members and especially the LST group! However not all of these resulted in any real developments, and this was especially true of the exchanges on 'internal security' that I related to natural disasters and then seemed to get overtaken by events, notably Katrina! The sessions at Cancun went well and produced some interesting discussions in Spanish and English, often at the same time! Contacts made with contributors prior to the conference meant that these discussions were better informed that they might otherwise have been,

and this was rewarding! Most debate since then has been with the potential organisers of a conference in Australia, possibly 2008? And we have high hopes on this front! As for 2006 and 2007 there appears to be a mood of quiet confidence and what contributions might be needed seems unclear at this point?"

Human Systems Enquiry
Arne Collen

I was unable to go to the ISSS conference in Cancun. Thus, I am not in a position to provide a full report. The SIG is planning a session at the conference 2006 at Sonoma. Other than this annual activity, the SIG is not doing anything more for 2005-2006.

Living Systems Analysis Special Integration Group (LSA SIG) activities at the 49th Annual Conference of the ISSS in Cancun, Mexico 2005.
James Simms

The LSA SIG activities were paper sessions, a workshop, and administration.

Paper Sessions

There were 2 LSA SIG paper sessions in the natural science stream of the six stream paper sessions at the conference. There were 3 papers in each of these 2 LSA sessions. The papers in the first session were (1) *Integrating the Community level into Living Systems Theory* by Kenneth Bailey, (2) *Effect of Laser Light on Maize Seed Vigour* by Claudia Hernandez Aguilar, Aquiles Carballo Carballo, Emesto Mercado Ramirez, and G. Vasilevski, and (3) *Metaphysics Dies, Allowing for the Emergence of a More Systemic Worldview* by Dennis Finlayson and Lynn Rasmussen. The papers in the second session were (1) *Motivation = Life* by Lane Tracy, (2) *Addiction in Living Systems* by Lane Tracy, and (3) *Applying Elementary Biocybernetics Systems to Medicine and Society* by A. DeBavelaere.

In *Integrating the Community Level into Living Systems Theory*, Bailey treats the desirability of including the community level into James Grier Miller's seven level hierarchy for classifying living systems. These levels are cell, organ, organism, group, organization, society, and supranational system. Since the promulgation of Miller's classification hierarchy in 1978, Miller and others have questioned the advisability of adding "community" to the hierarchy. Bailey concludes that including the community to the hierarchy would do more harm than good and that Miller's original 7 level classification hierarchy should not be changed.

In *Effect of Laser Light on Maize Seed Vigour* Hemandez Aguilar *et al* report the result of experiments to determine the effects of various doses of laser light on the decrease in time for seedling emergence and on the increase in dry weight of the seedlings. They also determined the optimum dose (intensity and time) that results in seedling emergent rate, in dry weight and seedling soil emergence. They report a significant increase in rate of emergence and in dry weight of maize seedlings when treated with optimal doses of laser light.

Finlayson and Rasmussen gave a brief history of the birth and death of metaphysics. Metaphysics, fathered around 325 BCE by Socrates and then Plato, with a rich career spanning 2300 years, has died. For years not recognized, metaphysics increased in popularity in the Renaissance. It was later challenged by Kant and elaborated upon by Russell and Whitehead. Systems thinkers like von Bertalanffy, Varela, and Miller offered a different worldview that eventually led to questions of its purpose and functions and finally eclipsed its basis for existence. Inherent in metaphysics is a dualityæa separation of the metaphysical from the physicalæthat melts away with general and living systems theory. A focus on process rather than on the material and theory offers a different framework for approaching life and problems.

In *Motivation = Life,* Tracy sets forth a comprehensive model of the motivation process and examines its implications for living systems at all levels. The model provides a sweeping view of the wide range of events that routinely transpire in the mundane process of moving from motives to behaviors. The model applies to cells, organs, organisms, and groups. It also suggests a wide variety of testable hypotheses about the motivation process and provides a basis for further study of motivation.

In *Addictions in Living Systems,* Tracy treats the behaviors of living systems that are guided by decision making processes that cause them to repeat certain acts to obtain certain resources over and over again, i.e., addictions. Addictions seem to use the same processes of motivation that govern the normal, adaptive behavior of living systems. The paper gives a brief review of motivation processes of living systems and then shows how these processes may lead to addiction, and links are drawn to chaos theory.

In *Applying Elementary Biocybernetic Systems to Medicine and Society*, DeBavelaere considers theoretical medicine from cybernetic and systems concepts. He identifies a system that is linked to the absorption of certain types of radiation and to information, which he named "subtle digestive system". DeBavelaere states that theoretical medicine brings out the importance of the subtle digestive system to control (prevention) and inhibit (treatment) of cancer.

Workshop

A workshop was conducted by James Simms that included a description of the development of living systems science from it early beginnings, about 50 years ago, up through the recent proof that living systems science is now a natural science with characteristics comparable to the existing natural sciences. These characteristics include a precise definition of the subject of the science, a classification system for the various living systems, along with identification of the elements of these systems, identification of the fundamental determinants of living systems phenomena, measurement for these determinants, and development of fundamental principles of the science. The work performed in the living systems area over the past 50 years provides the foundation for a natural living systems science that is equivalent to the existing natural sciences.

Administration

James Simms was elected chair of the LSA SIG. It was agreed among member of the SIG that effort would be made to get more exposure in Europe of living systems science and analysis.

OTSC
Maurice Yolles

OTASC is looking towards establishing a listing of members of this SIG with their publications, research interests, and professional affiations. The continuing interest of this SIG is seeing organisations as social communities, thereby allowing for a convergence between management systems/cybernetic theory and sociology. Another concerns the change imperative for autonomous organisations in a complex world (more on this can be found at the Journal of Organisational Transformation and Social Change). For the conference this year, we are calling for abstracts from all fields of organisational or social systems research and/or practice.

The format for submissions should be as a normal academic paper. The content may be a balance between theory and practice or a theoretical paper. A paper directly totally towards practice may be better directed towards the SIG on Systems Applications in Business and Industry (SABI). In any case the two SIGs work closely together. Further discussion on SIG activities will take place at the conference in Sonoma.

SIG for Students
Nicholas Magliocca

The SIG for Students was successfully reestablished at the 2005 ISSS conference in Cancun, Mexico. After previous attempts to solidify the group several years prior, the group received sufficient support from the Society's members and interest from multiple students.

The SIG for Student is unique in that it welcomes students from all fields to engage in collaborative dialogue. It was re-formed to cultivate the role of younger generations of emerging systems thinkers within the ISSS. The group fulfills outreach and feedback needs of the society.

The SIG for Students acted as both a fully functional SIG and as an orientation for new members. The group met several times during the conference to discuss their own works, and also acted as a valuable source of feedback to the rest of the Society. The walls of the SIG for Students's room acted as message boards where major topics of the conference were highlighted, members expressed their thoughts, and students' reflectioned on the significant ideas that emerged from various speakers and other SIG sessions. The new SIG also provided opportunities for students to network with their peers and connect with professional members— previously, an intimidating task.

This year's upcoming conference at Sonoma State University promises a greater student attendance. The SIG for Students will continue to grow and will be an integral part of this year's Red Thread Team. With continued support and initiative from such members as Alexander and Kathia Laszlo, Lezlie Kinyon, Vice President Gary Metcalf, incoming President Debora Hammond, and former President Enrique Herscher, the SIG for Students will be a perennial group.

Systems Philosophy and Ethics - Exploring Boundaries
Kurt Richardson

Our understanding of the notion of 'boundary' is key to our understanding of a systems-based philosophy and ethics. For example, if we assume that systemic boundaries are absolute, real and easily recognizable then it is possible to develop a universal philosophy and a universal ethics that provides explicit guidance for how we can lead a 'good' life in all contexts. We might refer to this as Modernist Ethics with its focus on a universal set of rules and the 'abstracting-away' of context. If we are more inclined to assume that boundaries are merely a feature of our explanations and not an inherent characteristic of the real world, and that boundary recognition is radically context dependent, then we may be more inclined toward a relativistic philosophy in which anything goes. In such a philosophy, whether a particular action is seen as 'good' or 'evil' is completely in the eye of the beholder – context becomes so important that the ability to abstract away from the concrete and develop useful rules of thumb becomes impossible.

In (complex) systems thinking the notion of 'boundary' is problematized. A particular boundary is seen as a temporary and (critically) emergent pattern whose ontological status cannot be easily associated with either 'real' or 'non-real'. As such it is possible to empathize both with the view that boundary recognition is strongly context dependent (therefore containing a significant subjective element), and with the view that boundaries are an intrinsic property of any system (whether absolutely real or not) and therefore allowing – to some extent – the development of quasi-objective tools for their determination. In a general sense a complex systems view of system boundaries acknowledges that they are both simultaneously 'real' and 'non-real'. This may seem an odd suggestion to those who find comfort in the binary logic of Modernism, but complexity thinking provides ample evidence to suggest that such binary 'language' is not sufficient to understand such systems in their own terms. Although 'dichotomization' is essential to the process of 'languaging' and therefore understanding, it restricts (as much as enables) our view of such systems. A systems view of philosophy and ethics demands a more sophisticated view of language and its relationship to the 'objects' of our interest, than is proffered by representationalist (i.e., Modernist) views of knowledge.

(Complex) systems thinkers who are interested in this issue of how our understanding relates to a systemic universe, and how certain actions might be chosen over other choices, are encouraged to submit their ideas to Kurt Richardson (kurt@isce.edu) by February 28th 2006. The kinds of discussions that are relevant to this special session are:

> Status, limits and legitimacy of knowledge regarding complex systems
> Relationship between linear and nonlinear philosophies
> Systems-based ethics
> Systemic limits to theories of everything
> Systems and the social sciences
> Systems and globalization
> Systems and human subjectivity

Proposals (i.e., abstracts of no more than 1000 words) will be chosen from those submitted based on their relevance to this session. Contributors of selected proposals will then be encouraged to submit full papers which will be considered for publication in the journal *Emergence: Complexity and Organization*. The session itself will not be run as the usual one-to-many lecturing (i.e., formal presentations will NOT be the dominant mode of interaction), but with a more interactive (dialogical) mode focusing on critical discussion of the keys themes.

Systems Specific Technology
Vadim Kvitash
1. In 2005 the scientific session on SST SIG did not take place officially and papers addressed to that session were transferred to other appropriate SIG sessions.
2. For ISSS 2006, I am soliciting papers and I hope that there will be ehough submissions for one or two sessions on Systems-Specific Technology.
3. Also, last October I submitted to Debora a detailed proposal for plenary session under the title "Games Complex Systems Play".

ALAS National Division Report

The announcement of the "rebirth", at the 49th. Annual Meeting at Cancun, of ALAS, ASOCIACIîN LATINOAMERICANA DE SISTEMAS (Latin American Association of Systems), by systemists and representatives of systemic societies from Mexico, Colombia, Brazil, Argentina, Bolivia, Perœ and Spanish speaking systermists from the United States. Please refer to http://projects.isss.org/Main/ALAS. Officers: Ernesto Lleras (Colombia), President; Ernesto Grun (Argentina), Vicepresident; Ignacio Pe—n (M xico), General Secretary.

The announcement of the creation of the Brazilian systems group on November 9th. and 10th, 2005, at the Riberao Preto campus of the Universidade de Sao Paulo, chaired by Dante Martinelli. ISSS past president Enrique G. Herrscher was guest speaker. The application as ISSS chapter in Brazil is in process.

The information that GESI, the Argentine Chapter of ISSS, has performed all through 2005 – and will continue in 2006 – its Seminar on Governance.

1) ALAS (Asociaci—n Lationamericana de Sistemas),created in Cancœen on occasion of the 49 ths Meeting of the ISSS is organizing its First Regional Meeting in Buenos Aires on the 7th, 8th and 9th August 2006.There will be Conferences by Prof Markus Schwaninger (University of St.Gallen, Switzerland, Charles Francois, Enrique Herrscher, Ernesto Lleras, and others.

Also presentation of papers, roundtables, and debates. Language will be Spanish and Portuguese. Three themes will be dominant:
> a) Governance and citizens participation in Latin American countries
> (agoras)

b) Systemic education and education about systems and

c) Inter and transdisciplinary appliccation of systemics and cybernetics especially in Latin America.

The Meeting is organized by GESI(Grupo de Estudio de Sistemas Integrados, local Chapter of ISSS) and the Buenos Aires YMCA, at whose premises the meeting will be held.

For further information see http://projects.isss.org/Main/ALAS or send email to

Ernesto GrŸn (GESI- ALAS) grun@elsitio.net ;

or Charles Fran ois (GESI) library@iafe.uba.ar;

or EnriqueG. Herrscher) (ISSS/GESI/YMCA): enriqueherrscher@fibertel.com.ar

Registration: Ymca Turismo Grupos-Reconquista 439 - C1003ABI -Ciudad Autonoma de Bs. Aires. Tel.(+54-11) 4311-4785 int. 247 Fax: int. 254 corporativo@ymca-turismo.com.ar

2) A Seminar on Transdisciplinary Systemics will he held in Termas de R'o Hondo, Province of Santiago del Estero, the 3d to 6th August organized by FundarIngenio. Language will be Spanish.

Further information can be obtained at   http://www.fundaringenio.net/eventos/seminario/seminario.htm

The idea is that participants can easily attend to both events as they are practically one.

Report from 1st Brazilian Congress on Systems Science

Dante P. Martinelli, PhD, Coordinator of the Group of Studies on Systems, University of S‹o Paulo at Ribeir‹o Preto School of Economics, Business and Accounting, Brazil.

Carla A. Arena Ventura, PhD, Vice Coordinator of the Group of Studies on Systems, University of S‹o Paulo at Ribeir‹o Preto School of Economics, Business and Accounting, Brazil.

The Group of Studies on Systems from the University of S‹o Paulo at Ribeir‹o Preto School of Economics, Business and Accounting, coordinated by Professor Dante Pinheiro Martinelli, organized on November 9 and 10, 2005, the **1st Brazilian Congress on Systems Science** held in the city of Ribeir‹o Preto, Brazil.

The Congress theme was **"Raising Consciousness about systems view: perspectives for the XXI century"** and the program was divided in Key-Speeches and Oral Presentations. A double-blind review process was organized for the papers submitted resulting in 30 papers accepted for oral presentation in the following areas: Systems Applications in Business and Industry; Systems Philosophy and Ethics; Systems Modelling and Simulation, Systems Psychology and Psychiatry; Information Systems Design and Information Technology; Medical Systems and Health; Evolution and Complexity; Organizational Transformation and Social Change.

The opening ceremony featured introductory remarks by the Dean of the University of S‹o Paulo at Ribeir‹o Preto School of Economics, Business and Accounting, Professor Marcos Cortez Campomar, and a welcoming address by Professor Dante Pinheiro Martinelli, who presented the work developed by the Brazilian Group of Studies on Systems. Following, Professor Enrique Herrscher, former ISSS President, delivered a remarkable speech on **"Systems View of the world"**. While he was chairing the ISSS, Professor Herrscher encouraged the formation of the Brazilian Group of Studies on Systems and his presence during the conference was really relevant to its consolidation.

The next day began with a speech delivered by Professor Ion Georgiou, from Funda ‹o Getœlio Vargas (Brazil), who highlighted important issues about "**Administration Effectiveness and Systems View"**. Professor Georgiou has worked in Russia and England and now has settled in Brazil. After this conference, the papers submitted to the Congress were presented in three oral sessions.

Following, Professor Teodoro Oniga, one of the pioneers of Systems Theory in Brazil, delivered a terrific speech on **"The Systems View in Different Fields of Human Knowledge"** and more papers were presented in three oral sessions. The Congress was closed with the lecture **"Systems, Ethics and Society"** brilliantly presented by Professor Donald de Raadt, a former ISSS President who came from Australia to attend the Congress. The unique opportunity to have two former ISSS Presidents was of upmost importance to the success of this event and the future formation of a ISSS Chapter in Brazil.

The 2nd Brazilian Congress on Systems will be also organized by the Brazilian Group of Studies on Systems and will be held in Ribeir‹o Preto in 2006. After the 2nd Congress, the plan is to rotate the coordination of the organization of the next Congresses among the members of the Group from different regions of Brazil.

In sum, with approximately 70 participants from different regions of Brazil and 30 papers presented in oral sessions, the 1st Brazilian Congress was a landmark to systems studies in Brazil.

SECTION FOUR
MEMBERS' BULLETIN BOARD

NEW BOOKS

Holistic Darwinism: Synergy, Cybernetics, and the Bioeconomics of Evolution

Peter A. Corning, University of Chicago Press (Fall 2005)

In recent years, evolutionary theorists have come to recognize that the reductionist, individualist, gene-centered approach to evolution is insufficient to account for the emergence of complex biological systems over time. Peter A. Corning has been in the forefront of a new generation of complexity theorists who have been working to re-shape the foundations of evolutionary theory. Well known for his Synergism Hypothesis÷a theory of complexity in evolution that assigns a key causal role to various forms of functional synergy÷Corning puts this theory into a much broader framework in *Holistic Darwinism*, addressing many of the issues, and concepts, associated with the evolution of complex systems. Corningâs paradigm embraces and integrates many related theoretical developments in recent years, from multi-level selection theory to niche construction theory, gene-culture coevolution theory, and theories of self-organization. Offering new approaches to thermodynamics, information theory, and economic analysis, Corning suggests how all of these domains can be brought firmly within what he characterizes as a post-neo-Darwinian evolutionary synthesis. Some of the ethical and ideological implications are also addressed.

Peter A. Corning is director of the Institute for the Study of Complex Systems. He is the author of *The Synergism Hypothesis* and *Natureâs Magic,* among other books*.*

Announcement of Publication of Volume 1 of Book Series Entitled: Churchman's Legacy and Related Works.

In November 2005, Kluwer/Plenum Publishers (now Springer) published Volume 1 of the Book Series entitled: Churchman's Legacy and Related Works. Book Series Editor: John P. van Gigch. (vang@sonic.net)

Volume 1 is entitled: RESCUING THE ENLIGHTENMENT FROM ITSELF: Critical and Systemic Implications for Democracy.

The Editor/Author of Volume 1 is Janet McIntyre-Mills, Flinders University, Adelaide, Australia.

Contributors of this volume include: Olov Forsgren; Janette Young; John P. van Gigch; Ken Bausch; Norma Romm; Alexander Christakis; Ian I. Mitroff; A. Carugati; D. Matthews; T. Ferris; Mike Metcalfe; Janet McIntyre; Doug Morgan; Russell Ackoff and Jamshid Gharajedaghi.

Contents: This book presents papers what make the case that good governance is about thinking and practice that can lead to a better balance of social, cultural, political, economic and environmental concerns to ensure a sustainable future for ourselves and future generations. Contributors were encouraged to show how West Churchman's writing has influenced their own ideas and their own thinking when tackling a world of conflicts, complexity and enemies of the system approach.

Volume 2 entitled WISDOM. KNOWLEDGE AND MANAGEMENT (Main Editor: John P. van Gigch) and Volume 3 entitled SYSTEMIC GOVERNANCE: WORKING AND RE-WORK-ING GEOGRAPHICAL AND CONCEPTUAL BOUNDARIES

(Author/Editor: Janet McIntyre Mills) will be published by Springer early 2006. Other volumes are already in the works. Prospective authors and editors are encouraged to contact the Series Editor with proposals for subsequent volumes. Indicate clearly intent of work and extent of present completion. Contact John P. van Gigch at <vang@sonic.net> or Janet McIntyre at <janet.mcintyre@flinders.edu.au>

Jerry Kurtyka

DMReview, the flagship journal of data warehouse and business intelligence (BI) software, has been kind enough to publish another one of my articles, the 6th one in their magazine since 1999. If you do not already receive the print edition, you can see the article in the web edition at: http://www.dmreview.com/article_sub.cfm?articleId=1042317

While each article has been different, I have tried in all of them to develop a unified approach: the application of humanistic systems theory to the problems of organizational learning, as assisted by software technology. This article owes a debt to one of my teachers, the late Bela Banathy Sr., a founder of the systems science movement that now includes thousands of practioners and academics worldwide.

OTHER ANNOUNCEMENTS

Dear ISSS Friends and Colleagues,

We, at GEMS, are delighted to announce our new service, GEMS Roundtable consulting. Below (and attached) is our brief announcement containing a GEMS Roundtable description, our competitive edge, and how you can get involved. For more information, including testimonials and options for delivery, see our website: www.gemslearning.com.

Thank you for your consideration, and Happy New Year!

Sue Gabriele, Executive Director, Gabriele Educational Materials & Systems (GEMS) Phone/fax: 310/536-8822 or 800/776-0186 info@gemslearning.com www.gemslearning.com

WHAT IS A GEMS ROUNDTABLE? A GEMS RoundTable is a proven way to accelerate learning, improve awareness/performance, and increase community spirit throughout an organization. A 30-minute weekly or monthly activity, it fits right into an organization's existing groups (classrooms, meetings). The GEMS RoundTable is designed to develop two subject matters at once: the agenda of the users' choice; and personal/social awareness and skills.

OUR COMPETITIVE EDGE. California schools need "systemic solutions" which "would require huge sums of money," according to a Rand Corporation report (January 4, 2005, Los Angeles Times). The GEMS RoundTable has a competitive advantage because it is a well-designed systemic solution that is also low cost and user-friendly! Specifically, the GEMS RoundTable is:

SYSTEMIC because it treats the whole organization or community, rather than one part of the system. For example, in schools, it is:

- inclusive: serves K-12+ classrooms as well as faculty, P.T.A., and district meetings.
- continuing: fits into classrooms/meetings as a 30-minute weekly/monthly session.
- emancipatory: increases learning, performance, and community spirit.

LOW COST because, after about five coached sessions, users (e.g.,students, educators, parents, etc.) run and revise their programs themselves.

USER-FRIENDLY because it is engaging, user-ready, and easily adaptable by users.

HOW YOU CAN GET INVOLVED. I know that you may be aware of some opportunities in your work that may be appropriate. So I want to ask you two favors: If you do know of opportunities for consultants in my expertise, could you point me in the right direction? Second, are there any people whom you would recommend I contact, within your organization or elsewhere, who could use this service? Potential clients in schools are principals, superintendents, teachers, PTA presidents. Potential clients in workplaces and other communities are CEOs, presidents, managers, trainers, meeting facilitators, and so forth.

Report on the ANZSYS Conference held in Christchurch , New Zealand, Dec 4-7, 2005.

About 60 people from many countries participated in the conference. they came from Australia, Sweden, Korea, US and UK among others. Wendy Gregory, Gerald Midgley and Kurt Richardson were the main organizers. There were many interactive sessions, poster sessions and straight presentations. We discussed the usual problems of the world from a systems thinking perspective. New Zealand as a country may be physically far from the center of the world (where is the center of the world?) but it has a very environmentally conscious population which tries to counter the ravages of our technologically oriented civilization while at the same time tries to take care of its native population (the Maoris) in ways which avoid the clashes occurring in other sites like France, Australia or the UK. New Zealand also attempts to protect its environment, its native flora and its unusual fauna. Unfortunately in true system form, the latter suffer along with humans of death by pollution, global warming and other ills brought about by our quest for corporate profit and greed.

We traveled extensively in New Zealand and are happy to report that it is a very advanced country intellectually alert and aesthetically sensitive to the quality of life and other amenities. However, too many tourists like us risk to spoil the landscape....

John P. van Gigch, December 2005. <vang@sonic.net>

90th Birthday of Ernst von Glasersfeld

May 2007 marks the 90th birthday of Ernst von Glasersfeld. Ernst is known for his pioneering work in cybernetics, working in the 50s with Ceccato in Italy, and his development of Radical Constructivism, an epistemological position that is closely related to that of Second Order Cybernetics. At the ASC Officers Meeting in Washington DC in October it was decided to award him the Society's Wiener Gold Medal.

Alex Riegler and I hope to publish a festschrift at the time of Ernst's birthday and are writing to ASC members and others on the ASC list to invite proposals for contributions. We are soliciting 2 types of contribution: academic papers that critically develop and/or evaluate Ernst's own work, or relate personal work and interests to von Glasersfeld's work; and more personal items including biography, reminiscence and anecdote. We believe that a festschrift should recognise the person and celebrate his work, so all contributions should be focussed on and around Ernst's work even when presented through your own work. The first sort of paper will typically be 3500 to 5000 words long, the second 1000 to 2500 words.

We invite members to write to us with their proposals. These should take the form of attached documents not longer than one side, containing your name and email address, a working title, and a brief synopsis that presents the argument or anecdote to be developed. You should indicate which type of contribution you wish to make. Proposals should reach us by Friday 13 January. We will consider all proposals and select those which, together, show the most promise and paint the most complete picture, informing applicants of our selection at the end January 2006. Final papers for refereeing will be due in at the start of September 2006. Please address your proposal and any other correspondence to:

festschrift@vonglasersfeld.com

We are also looking for graphic and photographic material. Please advise separately if you have such material. Given that the publication is web based, we can also include sound and video material.

The festschrift will be published as the May 2007 issue of Constructivist Foundations (CF; see http://www.univie.ac.at/constructivism/journal/), an independent academic peer-reviewed e-journal. Its aim is to promote the interdisciplinary study of scientific foundations and applications of constructivist sciences.

Best Wishes, Ranulph Glanville

Mexico City 2006: Report on Symposium "Participation and Development: the Mexico of the Future." Celebrating Russell L. Ackoff 87th Birthday

Mexico City, February 14-15, 2006.

The National Autonomous University of Mexico (UNAM) through the Institutes of Applied and Systems (IIMAS), Engineering (II) and The School of Engineering (FI) invited several renown scholars and friends of Russ Ackoff to a Symposium honoring his work and devoted to a discussion of the Mexico of the future. Russell Ackoff has a long history of collaboration with Mexican Scholars and professionals since the early 60's. His planning methodology has been put to practice in several instances along a variety of institutions and corporations. All of the projects he has been involved are geared towards development with emphasis in stakeholder participation.

NECSI

NECSI is currently seeking applicants for postdoctoral appointments in the study of complex global systems. Areas of study include, but are not limited to the global economy, world health, global peace and conflict, environment and ecology, and global communication and social systems. Experience with modeling techniques and computer simulation tools is desirable. For more information and directions on submitting applications, please visit: http://necsi.org/education/postdoc.html