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OFFICERS AND UNITS OF THE ISSS .....	3
SECTION ONE: PAPERS	
ISSS Incoming Presidential Address, Dr Allenna Leonard, July 17, 2009 .....	5
John Bowlby: Rediscovering a Systems Scientist, Gary S Metcalf.....	11
A Method for Identifying and Assessing Changes in Drivers and Linkages in a Social-Ecological System: The San Luis Valley, Colorado, Ken Mix, Vincente L Lopes and Walter Rast .....	12
Individual Human Activity Systems: A Systems Model for Individual Self- Discovery, Planning and Change, Elaine Parent .....	14
Moral Codes III, Spin and Regularization in Judgement, Dennis G Collins .....	16
The Evolution of Life and the Mental Stucture, Yoav Yiguel .....	18
SECTION TWO: MEETINGS AND CONFERENCES .....	21
SECTION THREE: ISSS BUSINESS (Announcements, Minutes of Meetings, Financial Reports) .....	35
SECTION FOUR: MEMBERS' BULLETIN BOARD .....	49
SECTION FIVE: MEMBERSHIP LISTING .....	55



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# SECTION ONE

## EDITORIALS, PAPERS AND CORRESPONDENCE

### ISSS Incoming Presidential Address Allenna Leonard July 17, 2009

#### Advancing Viable Governance

I am more than honored to assume the responsibility of president of the International Society for Systems Sciences – a post that has been held by so many pioneers and practitioners in our field. And I am happy to announce that the 2010 Conference will be held from July 18 to 23 at Wilfred Laurier University in Waterloo Ontario, about 70 miles from Toronto. The conference theme will be Governance for a Resilient Planet.

Let me start by saying that it would be great if we can survive the next hundred years without massive damage to our planet or ourselves. If we are going to be able to act effectively, we'll need to pull all the information we have together. I propose that one step in this direction could be a global viability index. Why?

Because there is a big gap between our knowledge our ability to make use of it within our present organizational and governance structures ... in traditional science, in the systems fields, and in participatory decision-making. In the rest of this talk I'm going to give you three views on this problem:

First, I'll discuss the prevailing views on regulation and multi-system governance. Then we'll look how governance was handled in one very special situation – the Chile of thirty-five years ago. And finally, we'll talk about how we can begin to create a global viability index to support the changes that are necessary for sustainability.

Let's begin with a look at the prevailing views of regulation and multi-system governance. Specifically, I'd like to ask: what attitudes are hindering us here? Although there has been more progress in some geographic areas than others (and I salute especially those here in Australia and New Zealand), globally there are many lost opportunities. As Systems Scientists, we are often up against a structure that values power for its own sake and regards information as a good to be hoarded. The prevailing reward system reinforces this. Some decision-makers do not see the level of interconnectedness and complexity in the world. Others may perceive the situation but not know how to convince others to act outside traditional frameworks. But the bigger question is: Why DO people have such negative attitudes about regulation and the need for governance? Regulation, communication and control are central to the area where I've been most active – organizational cybernetics.

Unfortunately, people often associate control with oppression and micro-management rather than with the steering actions that get us where we want to go. It's associated with the dour picture of a 'nanny state'. Grown-up free people feel that they don't need nannies to make decisions for them. But let's think about what a nanny does.

To use the term favored by Ross Ashby, a nanny has higher 'variety' than the child and keeps risks within the child's capacity to make distinctions and understand the consequences of their choices. 'Variety' refers to what we take to be the number of states a system or its subsystems can assume. Depending on the purpose and characteristics of the observer, a system's variety can be high or low. So, a nanny knows that the swings are ok but running into traffic is not. In the adult world we don't have nannies. Adult protections are often based on the concept of 'the prudent man'. But, in the face of complexity, the prudent man is out of his depth. Moreover, many threats to our safety and well-being remain out of sight until a rapid onset or slow onset disaster occurs. In the wake of such disasters, there are often calls for more regulation. Let me give you an obvious example: The recent financial crisis blindsided economies around the world.

Fund manager George Soros, who does understand systems, has called for regulators to limit bank proprietary trading to their own assets, dampen bubbles and market mood swings, and outlaw the credit default swaps that result in some investors profiting more from bankruptcy than from success. He isn't calling for a Nanny State, but Soros would definitely like to see more governance. Financial crises like this one are global, but we can also look to other examples that have local or specialized impacts. Contaminants in infant formula and pet food... toxic drywall... and hormonally active chemicals in our food containers... all raise serious questions about the health effect of the chemicals in our environment.

When these problems are revealed, someone always calls for more regulation. But not everyone is convinced that the solution is better than the problem. That's because regulation is often mis-characterized as the opposite of innovation, and therefore detrimental to economic growth. But that isn't necessarily so.

To see the beneficial effects of constraint, just think of the beautiful Haiku poems created within a very restrictive 17 syllable format. This is one example of how constraint (or regulation, if you will) can provide a spur to creativity... and a space for innovation to flourish. Another argument in favor of regulation is that unregulated innovation in our society's essential variables can lead to trouble. A better service or product for the consumer may not be the objective or the result. Sometimes, to return to the examples of finance, insurance and real estate services, the innovations mainly benefit the middlemen, to the detriment of almost everyone else. Ultimately, the world's population was landed with a global recession as a result of unregulated and deregulated financial activities. This isn't to say every regulation is good a good one. We all have horror stories.

Even well intended regulations can be badly designed. But, there is a remedy to bad regulation. It's regulation designed with the Conant-Ashby theorem in mind. The Conant-Ashby theorem says that "Every good regulator of a system must be a model of that system" In other words, in order to be a good regulator, a regulator must have requisite variety.

It follows from that premise that, if your goal is to design good regulation, you must know something about systems science. You must start with a principles-based rather than a rule based system for your regulatory framework to be coherent and consistent. But, what are the proper boundaries for a regulatory structure?

US Supreme Court Justice Oliver Wendell Holmes said "your freedom to swing your fist ends where my nose begins". But we don't know how long our arms are any more. We need to know all of the effects of our actions – the unintended as well as the intended. The plain fact is, more people and more interdependence requires more constraint whether for simple systems such as traffic, or global systems like the environment and the world economy. Our variety will either be constrained by better information and regulation or by breakdowns and the consequences of reverberating damage. One of the greatest challenges we face as systems scientists is explaining that fact to the world at large!

It isn't just that our concepts and tools are unfamiliar to decision-makers and the public. It's that the very idea that we live in a 'whole system' where everything is connected has yet to be fully absorbed. This is why people so often discover during disaster debriefings that the relevant information was at hand all along. We had the facts. We just didn't have a mechanism for connecting the dots.

Worse yet, if someone does make a connection and persists in bringing it to light, that person is likely to be dismissed as a crank, or ignored. That's because acknowledging the potential for disaster that he or she has revealed involves rocking the boat or spending more money. For this reason, whistle blowers are the unsung heroes of our civilization. So, let's look at what we've established.

#1. Regulation has a 'bad reputation' because so much of it is done badly, either through incompetence or caving in to special interests.

#2. Without good regulation, systems will continue to stabilize themselves through periodic disasters.

And #3. When someone occasionally sees a disaster coming, people don't want to listen.

It's no wonder that so many feel hopeless about the possibility of creating global regulation that works!

Fortunately, we can draw inspiration from a real-world counter example. Stafford Beer's work in Chile gives us an historical example of how a multi-system governance structure was attempted with considerable early success. Not that there weren't plenty of critics. Some spoke from ignorance, and others criticized the work as part of an organized effort to discredit anything having to do with the Allende administration that was elected to govern Chile in 1970. The whole project is described in the 2nd edition of Stafford Beer's book *Brain of the Firm*. So, let's quickly review this extraordinary accomplishment.

Salvador Allende was a leader who did want to connect the dots. That's why he invited Stafford Beer, whom Norbert Wiener called the father of management cybernetics, to become technical director of a system for organizing the entire country's social economy. This is probably the most ambitious social project attempted in our field. Chile was typical of countries in Latin America in that it had many state run industries.

At the time Stafford was invited to start this project in Chile, Allende was in the process of completing the nationalization of the copper industry, as well as nationalizing other industries considered necessary to the

public good. Project Cybersyn – the name is an amalgam of cybernetics and synergy - began in late 1971. It had two basic purposes – both addressing problems in requisite variety. One was to manage Chile's many state-run industries. The other, and more important purpose for this discussion was to maximize the people's participation in public affairs and decisions. Stafford was concerned that the normal mechanisms of democracy everywhere in the world lacked requisite variety.

Two hundred years have passed since political parties, periodic elections and bureaucracy were set up to handle political variety. These mechanisms seem outdated, in the face of real-time continuous news cycles with their sound bites and spin, and twenty-four/seven activity in the global economy. Dealing with incoming information flow is like drinking from a fire hose, but the capacity of our democratic institutions to reflect and respond is on the scale of a pipette. If we look at that problem through the lens that Stafford employed, the variety disbalance that plagues all democracies in the information age must either spill over or build up as pressure. One of these possibilities results in an alienation contrary to the exercise of good citizenship. The other results in unrest, perhaps violent; and stability is under threat. This is the problem that Stafford confronted almost forty years ago in Chile.

Stafford thought one way to rebalance the civic variety equation was to provide a summative communication channel to provide a real-time general measure of people's general level of happiness – or unhappiness – with their current situation. He called it an algedonic meter from the Greek words for pain and pleasure. A number of particular applications were envisioned. One was to televise the General Assembly to allow the public to register their satisfaction, or lack of it, and for the legislators to see – in real time – what people thought of their deliberations. Many of us saw a one-way version of this during the US presidential debates. Let me give you an example:

Allende wanted to hear from “the people” but needed a means of determining how different issues were viewed by different segments of society. He did not want to limit public input on specifics to polling or to the views of lobbyists. He asked Stafford to think about this. Stafford's work in this area eventually became the Team Syntegrity process.

A Syntegration is a planning process that was designed to bring requisite variety to bear on a question. A typical Syntegration brings a diverse group of thirty people together for several days to discuss a question of common concern. It is a non-hierarchical process where every participant has a unique but equivalent role. Together they learn from and about one another at the same time as they address their topics.

The other aspect of Project Cybersyn team was to monitor and manage the state run industries comprising the social economy in real time. Stafford's Viable System Model, with its generalized template of any viable system, was the centerpiece of this effort.

The Viable System Model, or VSM, is a template for diagnosing or designing the management roles and communications channels that are necessary to support the organization's productive capacity. Its design drew from the neurocybernetic work of Ross Ashby and Warren McCulloch. The purpose of the VSM for an organization is the same as for an amoeba – to promote survival by facilitating its response to the variety in its environments. There isn't time to do justice to a description of the VSM today but here is the gist of it. Multiple operations require:

- direct management of their interactions with their environment
- coordination to keep them from oscillating and getting in each other's way
- a locus of control to mediate between competing claims for resources and choose the best alternative
- some capability to anticipate and prepare for the future and
- an identity that balances the needs of the present and the future and assures that there is a form of closure for the whole system.

These functions correspond to systems one through five in the VSM. The strength of the model is that it can be applied to any viable system.

A system can be compared horizontally to other systems on the same level and vertically to systems of greater or lesser comprehensiveness. This vertical characteristic is called recursion.

The same five management functions can be examined for consistency as one goes up or down a nested organization from the shop floor in a particular plant to the level of the entire industry, as a whole.



Importantly, the only test of a viable system is that it is, in principle, capable of independent existence. An example would be a division of a business that could theoretically be spun off from the parent enterprise and still flourish.

Project Cybersyn identified recursions from the individual worker to the country as a whole. This allowed for consistent messages and measures to be designed. Although plant level pilot experiments were run, project Cybersyn concentrated on four mid-range levels of recursion where the government could make best use of the model's coordinative capacity. They were the product line, the sector, the four branches (heavy industry, light industry, consumer products and materials and supplies), and, finally, CORFO – the umbrella agency responsible for all the state run industries. Eventually each system from the plant upwards was to have its own VSM and its own list of essential variables to be monitored.

Each particular model was also informed by a number of standard operational research methods. They included indices of productivity, latency and performance and the design and testing of quantified flow charts. This information, distilled into a two-digit ratio, was fed into a statistical filter based on the Bayesian statistics of Harrison and Stevens.

The programme determined whether each reading outside the normal range was likely to reflect a random or transient occurrence or a slope or step change. All the systems at each level were responsible for reporting in bogus real time (daily or weekly) on about ten or twelve indices. If an unexpected value came in there was a pre-established time limit on how long the reporting level had to resolve the problem. This required that each index be tuned so its response was neither hair trigger nor fast asleep—two extremes that we would all like to see eliminated from the way our countries' respond to crisis.

A communications channel dedicated to alarm signals could override these arrangements in case of emergency. Decisions weren't referred upstairs unless the lower level decisions would constrain those of other units. One point to be stressed here is that the idea wasn't to control every last detail. Most of the data on which these indices were based were standard reports such as raw materials on hand, the status of orders, cash flow and absenteeism (which is a rough indicator of morale). The novelty came with how often they were recorded and their subsequent integration and interpretation. When a possible slope or step change appeared, that was a signal for management to investigate while there was more possibility of bringing the straying variable back into range. This portion of the model dealt with the present as reflected in the management functions of Systems One, Two and Three.

System Four's assessment of the future situation was addressed along two lines, rather than just one. The traditional planning processes proceeded as normal while experiments were performed using Jay Forrester's System Dynamics. The System Dynamics models showed promise but the situation in Chile was changing too fast for reliable rates and levels to be established.

System Five, according to President Allende, was "the people". In practical terms, the present and future of the social economy was to come together in an 'operations room'. This was literally a room with seven or eight chairs connected to about the same number of display screens. The screens included the VSM for the entity, its simulations, alerting screens monitoring critical factors and basic information screens such as accounts, maps or pictures.

The best thing about this elaborate system is that it had begun to work! Within two years of its implementation, two-thirds of the social economy was on line, with information coming by telex from the whole length of Chile to a computer in Santiago. Here is one example of the system's early-stage success: With its partially developed operations room, the Allende government was able to survive a strike of small businesses and other perturbations due to its knowledge of the location of redundant supplies and materials and other integrated information.

However, no system remains viable against overwhelming odds. The elected government of Chile was, in the end, no match for the external forces that determined its overthrow, and Allende died in a CIA inspired coup in 1973 – a story documented in the hearings chaired by US Senator Frank Church.

So, why is this relevant today? It is relevant because the disbalance of variety has only increased since Stafford's groundbreaking work in Chile almost forty years ago.

While cell phones and social and professional networking sites have enhanced the public's capacity to communicate with their governments and with each other, there has been less advance in consolidating the information and making it more coherent. that It is within the realm of the possible to design a recursive



global information system focused on our essential variables that would distill the voices of the people and provide early warning of vulnerabilities in our social and environmental fabric. We could begin by considering a viability index that monitored the essential variables for human life and their measures. These essential variables are greater in number and more complex in degree for people but they are not necessarily different in kind from those of other animals. They would be:

- Air
- Water
- Food
- Shelter
- Protection
- Social engagement
- Communication
- Capacity to reproduce

For human societies, these needs are met or supported by our infrastructure. Could such an index realistically be created? I believe the answer is yes. Advances in computer power mean that far more is possible now than in the '70's in Chile when some information traveled by donkey to the nearest telex machine. And I don't think we should wait around hoping for another Allende to implement this possibility. The people – that's us, and especially us in the systems community – could start the ball rolling. We could look at our essential variables and how we might identify what drives them. The potential for self-organization in the information age is nearly limitless. There are other models of providing information that can lead to governance, beyond those of governments, bureaucracies and institutions. Transparency International, founded in 1993, provides one model.

It works globally against corruption by assembling information and ranking countries on their Transparency Index. Its work led, in 2003, to the United Nations Convention Against Corruption. Much of Transparency International's information is collected and coordinated by country chapters in the form of sub-indices that are readily available. These indices address how much official business is conducted in the sunshine; and conversely, how much cover exists for corruption to flourish. As US Supreme Court Justice Louis Brandeis said, "Sunlight is the best disinfectant". Wikipedia provides another model for how exhaustive information can be created and disseminated without the help of a central agency or sponsor. Individuals with knowledge and interest in the topic upload information onto a set of templates. They don't have to be experts.

People with additional knowledge could add to, correct or dispute the information. Links are provided to other sites and resources. Wikipedia is thus a prime example of the redundancy of potential command. So, let's assume for a minute that it's truly possible to assemble a global viability index. How would we begin to launch such a global undertaking? We could begin by asking ourselves what concepts and tools we use to import requisite variety to our efforts and how they might be applied on a larger scale.

I would suggest that the Viable System Model could again be applied to monitor and report on the management of critical variables in the social economy and the natural environment. We might ask what measures would be analogous to temperature and blood pressure in the human body that would provide requisite variety? Such a VSM would not arrive full-blown, but it could be outlined and made widely available even at an early stage of development. A Syntegration—in other words, a planning process that's designed to bring requisite variety to bear on a question— or other group process - could set the stage.

It might well be possible to put up qualitative if not quantitative flow charts to identify indices to populate a basic Viable System Model for each community at several levels of recursion. People or groups could be invited to fill in the blanks describing the current state of affairs as they knew them. Members of the public could contribute their local knowledge, ask questions, identify anomalies – or simply add their perspectives.

Since the VSM typically identifies around ten indices per recursion, the design requires hard thinking but running it is easier. A key would be to think in real time. The response of the World Health Organization and the centres for disease control to the swine flu is an example of rapid response and coordination. The bureaucracy that took more than a month to get sanitary supplies to the swine flu outbreak on Native Reserves in Manitoba because of fears of providing alcohol in any form on the Reserve is its opposite. And the VSM is by no means the only approach that could be useful.

There have been many new programmes and applications in System Dynamics. The complexity theory approach to tracking emergence is another. There are a number of group processes, in addition to Syntegration that facilitate participatory decision-making. I'd like to mention one tool that combines modeling and participatory features and can be used with groups that are not familiar with systems processes.

It is the Professor Vester Sensitivity Analysis. Although it has been widely used in German-speaking countries, the main book describing it “The Art of Interconnected Thinking” has only been available in English since 2007. This tool applies eight biocybernetic rules in a computer assisted, facilitated exercise.

For example, the first of these rules is negative feedback loops must dominate positive ones to have a stable system. A causal loop diagram of most of the recent regulatory failures would show that the reverse was true. No wonder they were runaway failures. Students in German speaking countries have been learning about systemic relationships and competing in Vester’s game “Ecopolitics” over the past few years, and a comparable game could be designed to teach about a viability index. We might look at indices for physical, environmental, social, financial, public health and security infrastructures.

It could start with examples of physical infrastructure. For each, we could complete a model that documented its physical presence, usage patterns, financial supports, vulnerabilities, feedback systems and connectivity. It would also be helpful to indicate the consequences of failure for each. Lots of public information is already available such as GPS systems, maps of social and environmental boundaries and disaster plans.

As a systems practitioner I am mindful that categories are never objective. There are many criteria on which distinctions could be made and the choice would need to be a product of cultural sensitivity and collective wisdom. Nevertheless, an inventory of physical infrastructure might include:

- energy
- communications;
- roads, bridges and levees
- water, sewer and waste removal
- buildings and building codes, and
- transportation.

Even with such concrete examples, information may be missing or unconnected and that could be important. To take one example, when the Mississippi River flooded in 2008, CNN reported that no one had the answer to the question “how many levees are there?” The Army Corps of Engineers, the different states and the big cities knew about their own levees. But, at the level of counties, towns and private properties, the information was incomplete. Now understand that – in spite of the many jurisdictions involved – we’re still talking about one big river full of rushing water – a force of physics. What is especially sobering is that this is the preeminent river in the United States.

If its information was incomplete, what does that imply about information in countries with fewer resources? Even before modeling takes place, vulnerabilities can be identified and there can be red flags that suggest all is not well. For example, the damage and fall out from even short-term interruption of our Internet communications by hackers can be very serious. So far, hacker disruptions seem to be caused primarily by individuals operating out of their basements. But our vulnerability to an attack by a concentrated and professional group could have more severe consequences. Are we comfortable with a small number of providers ‘too big to fail’ handling such a high proportion of our transactions?

Another example: in 2004, poor maintenance and lax regulation led to a power blackout for much of the northeastern US and parts of Canada. What information would we want to monitor to prevent or contain future power outages? Sometimes the threat is to the social fabric. Failed states and ethnic tensions that threaten to explode into civil war, increases in criminality and the actions of zealots are just the major factors. There are too many for any of us to comprehend but not too many for us to address collectively in an inclusive information network. A VSM would provide a structure to map these and other factors in a consistent and coherent manner.

So far, I’ve spoken about the content that might make up a viability index. Now I’d like to turn to the process of creating one. While it is not possible to be specific about how such an index could be built, a few things can be said. First, the index should be independent. As an information commons, the indices would belong to everyone and no one. A small amount of funding will be needed for design and web administration and maintenance. The information would be developed as open source. Transition towns already have made a beginning, Pilot projects could start in university settings that would look at essential variables in their own areas. We’ve seen some examples at this conference. Remember, we’re talking about ten indices per entity at each recursion--and much of that information is already available, if not actually assembled. In an open source context, these dynamic maps would begin in rough form and be improved over time with public participation. The credibility of such an index could increase as has been the case with Wikipedia. Also, like Wikipedia, statements could and would be challenged and in most cases further confirmation would be called for before making decisions. To recap:

In spite of the negative attitude that many people have toward regulation and governance, we know that systems tend to stability but they may do so in ways that are counterproductive for human beings and the planet. We also know, from Stafford Beer's work in Allende's Chile, that it is possible to create a large scale viability index that has the potential to monitor social systems on a proactive basis that employs the insights of systems science to avoid crises before they occur. With these facts in mind, I suggest that we in the systems community begin to create a global viability index of variables in the public interest. It could start as a grass roots phenomenon of information sharing and integration using the VSM and other tools. People could be invited to participate from all over the world. Once such a project got underway, I believe it would grow and self-correct along the way, much as Wikipedia has.

If the public could easily access such information, they could put pressure on governments, corporations and other institutions to act. Without public pressure, it is difficult for governments to act to change the status quo. A story is told about President Franklin Roosevelt. He met with some labor leaders and told them "I agree with you 100%. Now, make me do it." A new view of governance is needed before a new role for government can emerge. Continuous broadly inclusive measures are required to make connections between actions and their unintended consequences and between relationships and results. As systems people, we deal with dynamic processes and the relationships between them. We are uniquely qualified to design a framework to integrate expert and grass-roots viewpoints in, or close to, real time.

And one more thing. You've probably noticed that I don't consider this an academic topic! We have knowledge of how systems work; we have methodologies and models; and we have a special responsibility to bring them to light. If we don't promote a whole systems view of our challenges, who will? Let's all put ourselves in the picture to create solutions. I hope you will all think about the potential for a viability index - or advance your own ideas. The very future of our planet may depend on it. Thank you.

### **John Bowlby: Rediscovering a Systems Scientist Gary S. Metcalf**

An ISSS research project was conducted in 2009, tracing the possible influences that systems science might have had on John Bowlby's development of Attachment Theory. As it turns out, there were almost countless connections between Bowlby and systems theorists of many persuasions.

Bowlby joined the Tavistock Institute of Medical Psychiatry at the end of World War II, at the time that it was being split into the Tavistock Institute, and the Tavistock Clinic (where Bowlby headed the Child Guidance Department.) There, he was close friends with Eric Trist, and recognized the significant influence of Kurt Lewin on the Tavistock programs.

Bowlby's research into the mental health issues of homeless children orphaned during the war helped initiate a series of meetings sponsored by the World Health Organization, from 1953-1956. These four, one-week meetings were chaired by Frank Fremont-Smith, based on his work as part of the Josiah Macy Junior Foundation, and modeled after the Macy Foundation Conferences (the "birthplace" of cybernetics.) Known as the WHO Study Group, the members included Margaret Mead, Konrad Lorenz, John Piaget, and William Grey Walter, and guests included Erik Erikson and Ludwig von Bertalanffy.

From 1957-58, Bowlby spent a year as a fellow at the Center for Advanced Study in the Behavioral Sciences (CASBS) at Stanford, in the US. This was several years after the founders of the Society for General Systems Research (now ISSS) had been there, but during his stay Bowlby met and saw the work of Gregory Bateson, and became friends with David Easton.

A copy of the final research paper can be found at: <http://iss.org/world/bulletins>

This research was funded by the FHL Foundation in the US, and administered by David Ing in his role as VP, Research and Publications. The project was initiated by Rick Leonhardt, President of the FHL Foundation, based on his belief that a connection must have existed, and after his reading of Debora Hammond's *The Science of Synthesis*, and Ludwig von Bertalanffy's *General System Theory*. The actual research and culminating paper were done by Gary Metcalf, ISSS Past-President. Research included an interview with Sir Richard Bowlby, John Bowlby's son, and investigation of the Bowlby Archives at the Wellcome Library in London.

**A Method for Identifying and Assessing Changes in Drivers and Linkages in a  
Social-Ecological System: The San Luis Valley, Colorado**  
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## **Introduction**

There has been growing interest in developing methods for analyzing the complex interactions of driving elements that force changes in social-ecological systems. Interactions between these drivers have often been conceptualized with subjectively-based analyses, due to lack of rigorous methodologies. This study presents a method for identifying drivers and analyzing their interactions

The San Luis Valley (SLV) in the Upper Rio Grande, both located in southern Colorado (CO), provide a case study application of this approach. The Rio Grande is a transboundary river of economic importance to many agricultural communities within its watershed. The Upper Rio Grande headwaters are the primary contributor to streamflow upstream of the confluence of the Rio Conchos at Presidio, TX. The SLV is an irrigation-dependent agriculture community, generating more than 30% of the entire valley revenue. To demonstrate the effectiveness of the methodology, the Upper Rio Grande and SLV were utilized as they collectively form a well defined agro-social-ecological system. Depending on the driver, data begins between 1852 and 1919, all extends to 2007. It is also of national and international importance. The utilization of Rio Grande water in this region were the source of previous conflicts with downstream states of New Mexico (NM), Texas (TX) and the Republic of Mexico, ultimately resulting in the 1936 Rio Grande Interstate Compact with NM, TX and CO., and the 1906 and 1948 Treaties with Mexico, governing allocation of the Rio Grande waters.

## **Methods for driver identification and analysis**

Driver identification begins with identification of a main driver, followed by additional exogenous and endogenous drivers. A system as a whole depends on a main driver (e.g., a natural resource). Further, according to the 2005 UN Millennium Ecosystem Assessment, it is common to identify a proximal resource as a primary driver in a system. Each driver should possess at least one plausible relationship with another driver, and potential for more than one longitude (a specific aspect of a driver). A primary natural resource driver (e.g., iron ore) could be divided into 3 longitudes (e.g., annual mined tonnage of hematite, limonite and siderite).

The driver identification process herein is a heuristic questionnaire where ecosystem dynamics are identified by asking questions pertinent to it. Further, to prevent inclusion of drivers ad infinitum the stepwise process utilizes the principle of simplicity espoused by William of Occam (*entia non sunt multiplicanda praeter necessitatem*) and Einstein's concept of *ias simple as possible, but no simpler.* Thus, it requires all drivers be no more than one degree of separation from the primary driver, as follows:

Step 1 Identify primary resource necessary for system functioning.

Step 2 Identify secondary resources necessary for system functioning.

Step 3 Identify primary user or resource extractor.

Step 4 Identify social aspects (demographics, economics, etc.) dependent on primary or secondary resources.

Step 5 Identify policy and laws governing the resource, its extraction, and user rights to it. (may be split into internal and external drivers)

Step 6 Identify contributory process(es) that renew or maintain the resource, or that impacts the source within the temporal scale of interest, if present.

After driver identification, the first analytic step is to develop several quantitative longitudes for each driver, then analyze via change point analysis to identify periods within each longitude that are significantly different from other periods. Qualitative drivers may exhibit change points considered as discrete events (e.g., a change in law, a singular natural disaster or social shift).



After change point analysis is completed, suitable statistics may be applied to quantify the level of statistically-significant differences in mean values between periods within a longitude. For human-dominated systems such as the SLV, however, statistical significance may be deferred in favor of practical significance. A 5% loss of revenue, for example, may not be statistically significant, if the actual dollar value is high enough, however, it may still be practically significant to the community, in terms of income, jobs or loss of tax revenue.

### **Results of driver identification**

Five drivers were identified for the SLV social-ecological system. Because SLV agriculture is entirely irrigated, water was identified as the primary economic natural resource, measurable in the form of streamflow; representing Driver #1, the central system driver. Three longitudes were developed from stream gauge station data: streamflow, water gain volume, and Julian days of spring melt peak flow. Agriculture is the secondary system resource, also representing the primary water user, and was identified as Driver #2. Two quantitative and one qualitative longitude were developed from crop data: total annual acreage, total annual alfalfa acreage, and advent of center pivot irrigation, respectively. Driver #3 is policies governing SLV water use, with both qualitative and quantitative longitudes. Qualitative data are policy changes related to water use, while quantitative longitudes are related to water right assignments. Seven longitudes were developed from water rights data: surface water rights appropriations and allocations, groundwater rights as appropriations and allocations from both unconfined and confined aquifers, and reservoir construction.

External laws and policy, in the form of treaties and compacts, were identified as Driver #4. These factors were not developed into longitudes as they represent discreet events, not continuous data. Where relevant, they were applied to analysis of other longitudes. The contributory process, with potential to impact Drivers #1 and #2, was identified as climate; Driver #5. Climate change is a relevant temporal process, with potential to impact streamflow via changes in spring melt patterns, and increases in crop water demands and growing degree days (GDD). Climate data were developed into three longitudes (temperature, GDD, freeze-free period).

### **Results of driver data analysis**

Driver #1: Change point and statistical analysis of streamflow at Lobatos gauge station (southern most of the SLV and terminus of the Upper Rio Grande) identified four distinct periods of streamflow (1912-1924; 1925-1957; 1958-1965; 1966-2007). Streamflow water volumes for the combined second and third periods (1925-1965) indicated an unaccounted for annual water volume reduction of nearly 60 hm<sup>3</sup>. Further, analysis of changes in annual water gain volumes indicated the Upper Rio Grande has experienced a 34 hm<sup>3</sup> water loss of aquifer release to the stream since 1924. Water diverted for irrigation purposes since 1993 has increased by about 10% and peak spring melt flows are arriving about 20 days earlier since 1984.

Driver #2: Change point analysis of the agricultural longitude of all crop acreage indicated acreage increased by 40,000 ha after 1948. Alfalfa acreage increased from 26,000 ha in 1957 to 48,000 ha in 2007. Slight retractions in acreage occurred in the 1930s-1940s as a result of soil salinization, the Great Depression and WWII. Groundwater use facilitated a minor expansion in agriculture after the 1940s, since land without surface water rights could be irrigated. A more pronounced second increase in irrigated agriculture took place after the 1950s, as salinized soils were reclaimed and center pivot irrigation was introduced, the latter increased irrigated acreage with groundwater allocations. However, the advent of center pivot irrigation improved water use efficiency and about 50% of current SLV production utilizes center pivot systems.

Driver #3: Change point analysis of water rights longitudes indicated surface water allocations from the Rio Grande and its tributaries peaked by 1912, with few surface water allocations following thereafter. Groundwater allocations subsequently increased through the 1960s, with more than 50% of allocated pumping rates allotted from 1932-1966. A moratorium was placed on pumping water from the unconfined and confined aquifers in 1974 and 1981.

Driver #4: Several discrete law and policy changes external to the Upper Rio Grande system occurred, and were precipitated by events in the system. Upper Rio Grande water withdrawals were so extensive by the late-1800s the Rio Grande was dry at Ciudad Juarez, Mexico, resulting in the 1906 Treaty between the US and Mexico guaranteeing an annual delivery of 74 hm<sup>3</sup> of water to the city. Water withdrawals in the valley also resulted in the 1936 Rio Grande Compact, assuring a portion of river flow to NM and TX, and the 1948 Binational Treaty with Mexico governing shared use of the river. Further, NM and TX sued CO in the 1960s to enforce compliance with the Rio Grande Compact. CO has been in compliance with Compact obligations since the mid-1980s, reducing SLV diversions from the Rio Grande from 90% to 75%.

Driver #5: Change point and statistical analysis of annual temperature indicated mean temperature was higher by about 1°C after 1993. Change point analysis of the freeze-free period indicated the growing season has extended by about 15 days since 1980. Similarly, analyses indicated GDD increased by about 30 days.

### **Summary**

The Upper Rio Grande flow has decreased by 430 hm<sup>3</sup> at the Lobatos gauging station since 1924. Early streamflow reductions were the result of surface water diversions. Additional flow reductions of about 60 hm<sup>3</sup> after 1932 resulted from streamflow loss to aquifer recharge as groundwater extraction increased. Return flows from groundwater pumping, however, inflated streamflow measurements at Lobatos, thereby masking the actual impact of groundwater extractions.

The 1°C mean annual temperature increase after 1993 caused a 10% increase in water diversions, as crop water demands increased with temperature. Although increased alfalfa acreage corresponds to increased water diversions, the advent of water efficient center-pivot irrigation systems, coincident with alfalfa increases, has reduced potential impacts. Further, the reduction of surface water diversions since the mid-1980s potentially masks the effects of groundwater pumping, since groundwater is not part of the Rio Grande Compact. The Upper Rio Grande is complex, with changes in some drivers reducing the potential effects of changes in others and some exacerbating changes. For example, groundwater extraction reduced streamflow but the return flows inflate streamflow estimates, thereby masking increases in water diversions. Ultimately, all water diverted in the SLV is for agriculturally-related purposes.

The driver identification process identified 5 drivers with several longitudes. The change point and statistical analyses identified quantifiable changes allowing the development of linkages between drivers, heretofore undetected. The result is a better understanding of a complex system and in particular the case of the SLV and Upper Rio Grande relationships between streamflow, climate, water allocations, water policy and agricultural water use.

## **Individual Human Activity Systems: A Systems Model for Individual Self- Discovery, Planning and Change Elaine Parent**

One of the first reported attempts to use a living systems approach to understand and solve complex problems in the real world of human groups was by English management consultant, Peter Checkland in the 1980's. He developed a new Human Activity Systems model to use in learning more about how organizations work, as well as discovering solutions to both known as well as newly-defined problems and goals. His work in soft systems methodology (1981,1999) is well established in the management science literature and he is known for his work at the U of Lancaster.

Adaptation of Checkland's thinking by Bela H. Banathy (1973 ,1996) and his system for planning and introducing change in educational systems followed. Banathy's work set the stage for the ideas that are described below.

This is the conceptualization of each individual person as a miniature or micro - system, with each individual person interacting with his/her experiential or subjective world. It builds on the person-environment framework and is particularly appropriate for use in an individual life-planning situation, for personal development or self-discovery purposes.

It is an attempt to operationalize the person-environment philosophy that has remained on the 'back burner' of psychology for decades. It focuses on a redefinition of the subjective environment (or what is personally 'real' to the individual). The latter is that of translating the environment into each individual's subjective worlds into three divisions: the physical, social and psychological environment or world. This distinction is enhanced by a different set of rules that are used for determining personal meaning. The Game of Life metaphor is used as the context for each individual contemplating his own experience – in the past, in the present and in the projected future. The rationale for this compartmentism of experience is the common dictum that if it is not inspected and reviewed, we carry the past into the present and project it into the future.

Focus in the theoretical formulation is on the role of each individual person's information processing and meaning-making activities. This is the key to understanding the pattern (established relationships) in how the individual is currently living his/her day-to-day life. This awareness of personal and individual pattern is important for the individual to make desired change.



Included in the model is an emphasis on understanding the nature of system interconnections and inter-relationships with the environment as well as the key roles played by the systems variable of information and life energy exchange. This includes both within and between each component in the (physical, social and psychological) system in the individual's person/subjective world system.

Like groups, that are designed and created by humans, for a specific purpose and guided by their own vision of the future, the proposed model focuses on the individual human being and his subjective goals and purposes. Like in groups, each individual defines his/her own policies and constantly seeks new purposes and new niches or roles to play in the environment.

This internal perspective in human activity systems is distinct from other naturally-created systems in which problems are defined and solutions are proposed by those outside of the system, on the basis of their observations. Examples of the latter might be a mechanical breakdown or a natural disaster such as an earthquake or flood.

### **An example of an educational group Human Activity System.**

An undergraduate course is a group human activity system. It has internal participants (professor, TAs, undergraduates) and their specified relationships regulate the system. In most traditional instances, everyone abides by their given roles and expectations.

The collective purpose of the system is to impart knowledge about a particular topic area (for example, social anthropology, Mexican political history, or cell biology). The participants work individually and collectively to achieve that purpose. The professor prepares a lecture and tries to convey material in a manner that is interesting, accessible and informative. TAs provide support functions, try to elucidate particularly difficult material in discussion sections, talk with students during office hours, grade exams, etc. Under-graduate students read the course material in preparation for lecture and exams, listen respectfully in class, take notes, ask questions, etc.

The larger environment for this academic classroom is the academic institution. It provides resources (administrative support, buildings, audio-visual aids), constraints (limits to how, when and where class, office hours and exams take place), and expectations (that students will learn, that there will not be cheating or favoritism, etc.).

### **A Description of an individual Human Activity System**

A similar framework can be adapted for envisioning an individual Human Activity System, with each participant/person as a part of an individual, like-no-other micro-system. This includes the individual person (as a complex system of systems (Ford, 1987) in interaction with his/her subjective world (or personally-experienced world). The latter, too, is a unique, like-no-other individual system. It consists of the relevant part of the physical world, the social world of human others, and his/her personal/psychological world or system.

There are patterned relationships (clearly established and habitual patterns of interaction) between each person and individual objects and events in each of the subsystems of the personally-experienced or subjective worlds. One framework for identifying, understanding and planning is Banathy's conceptualization of the three lenses useful for understanding the uniqueness, complexity and functioning of an educational system. These same three lenses can be adapted as a framework for understanding how individual humans 'work.' They include:

(1) a lens that displays the Internal-External relationships: This is a systems-environment lens that provides a "birds eye" descriptive view of the interdependent relationships between the individual human activity system and its environment, including how they co-exist and co-evolve together. This for example could indicate the general boundaries of the world (both experiential and material) and those elements (or places or individuals) who are part of the system's experiential environment or subjective world.

2. Internal relationships: A second lens is used to provide a snapshot of the structure of the human activity system itself, at a given point in time. This includes relationships between the subjective world systems: physical, social and psychological subsystems. This could be particularly useful for identifying the degree of balance of information and energy in the various systems.

3. Changes over time: A lens that shows the results of the person- environment interaction (or behavior) and to note the changes (and the effects of these changes) that take place in that interaction over time. This can be both past and the future as envisioned in a Personal Game and an 'Ideal Scene' format.

**Moral Codes III: Spin and Regularization in Judgment**  
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## Introduction

The objective of this paper is to extend the model of the author's previous paper Thermodynamic Modelling of Moral Codes (Moral Codes I, [1] 2001) beyond energy and entropy to include magnetization and two "polarizations," so as to be able to describe more social science phenomena. In particular, according to the method of E.T. Jaynes [3, p.623] the maximum entropy density is based on the form

$$P(x_i) = \exp[-c + \beta(-E(x_i) + hM(x_i) + gL(x_i) + vP(x_i))] \text{ where } c \text{ is a normalization}$$

Constant related to the so-called partition function  $Z = \exp[c]$  and  $\beta = 1/T$  with  $T$  equal to the (abstract) temperature. Here  $E$  stands for the quadratic (based on level) social cost in Moral Codes I or the Ising energy (based on spin) in this model,  $M$  stands for magnetization (evidence or propaganda in the social setting),  $L$  stands for left-right polarization (in the political setting) and  $P$  stands for vertical polarization.

The derivation shows that the above form of solution maximizes the entropy of the density subject to the constraints on  $E, M, L,$  and  $P,$  that they have given average values.

A future project is to combine the two types of energy. Here (Moral Codes III) in the Ising model it is the opinion (plus or minus spin) of 6 individuals that is of interest, so that there is no interaction with the unknown internal level of the individuals. Thus the applications of Moral Codes III (omitted part) are to judgments, voting and so on, about moral or political cases. There is no discussion about whether or not as part of a jury, a war veteran, say, who had killed people in a war, would be more or less likely to convict a person charged with murder. The subject of Moral Codes III is probability densities of judgments (for—plus spin, or against—minus spin) rather than probability densities of population moral levels. "Spin" refers to the fact that the levels of the next section can flip, exchanging 0 and 9, 1 and 8, and so on, without changing probabilities if the density is symmetric about the average, in this case 4.5.

## Moral Codes I Update

According to Moral Codes I, at higher temperatures, the levels of the moral code are filled out until as (abstract) temperature goes to infinity, the density becomes uniform (probability equals 10%) over the ten levels, which are the following:

- 0) "saint," making everyone better
- 1) "Good Samaritan," making most better
- 2) Productive citizen, service making some better, but with limited risk to self
- 3) Decent person of good will, honors parents, not greedy but protects own interests
- 4) Law-abiding but has self interest with possible thought crime such as coveting
- 5) Word crime: swearing, lying, as well as thought crime
- 6) Property crime, stealing, cheating
- 7) Violent crime, assault
- 8) Murder
- 9) Mass murder, treason, crime against humanity, making holes in the dikes

Conversely, assuming a symmetric discrete Gaussian density (of form proportional to  $\exp[-a^*k^*(9-k)]$ , centered at average level 4.5, as temperature goes to 0, almost all the population occupies levels 4) and 5).

To the extent that the moral code (say police) tries to keep the population out of the higher levels, then it must keep (abstract) temperature low. Thus the moral code can be considered as a, say metal cylinder around the middlelevels (4 and 5) keeping the population out of the extreme levels (0 to 2 and 7 to 9). Thus even though the goal of the moral code is to allow society to operate at a higher temperature in the sense that more levels of non-harmful activity can be occupied, as far as the moral codes density goes, the objective is to keep the temperature down, so as to limit disruptive behavior.

One problem of Moral Codes I, p.5 ("An interesting mathematical problem is to find out if there are choices for the temperature  $T$ , mean or average level  $\mu$ , and cost of each level, such that the results of this model match the results of the binomial distribution.") can be more-or-less solved by observing that both the dis-

crete Gaussian and binomial can be approximated by the Gaussian or normal density and therefore by each other. In fact the binomial with mean 4.5 and  $n = 9$  trials and  $p = \frac{1}{2}$  can be approximated by a Gaussian with mean  $np = 9 \cdot \frac{1}{2} = 4.5$  and variance  $npq = 9 \cdot \frac{1}{2} \cdot (1 - \frac{1}{2}) = \frac{9}{4}$  or standard deviation  $\sigma = \frac{3}{2}$ . Then the discrete Gaussian of form  $\exp(-a \cdot k \cdot (n - k))$  matches the Gaussian  $\exp(-\frac{(x - \mu)^2}{2 \cdot \sigma^2})$  if  $a = \frac{1}{2 \cdot \sigma^2} = \frac{1}{2 \cdot (\frac{3}{2})^2} = \frac{1}{9/2} = \frac{2}{9} = .22$  approximately, or  $T = \frac{1}{2/9} = \frac{9}{2} = 4.5$ .

This discrete Gaussian (with  $a = .22$  and  $T = 4.5$ ) can be taken as normative of moral behavior without a moral code, namely, there are nine moral choices, each with probability  $\frac{1}{2}$  of being correct, and someone who makes no mistakes ends up at level 0 (saint) and someone who makes all nine decision wrong ends up at level 9. As stated in

Moral Codes I, the U.S. can be taken to have a temperature approximately  $T = 1.4$  (or  $a = .7$ ). In this view the effect of the moral code is to lower the (abstract) temperature by a factor of about 3 from 4.5 to 1.4. This decrease has the effect, for example of reducing the murder rate (level 8) from 1749 per 100,000 to about 8 per 100,000. See Table I.

It is possible to check what abstract temperature would correspond to the highest murder rates of about 17 per 100,000, which correspond to Puerto Rico [4, p.14] in 1998 ( or 20/100,000 in 2002), or 19.5 per 100,000 in Dearborn-Livonia, Michigan (near Detroit) in 2005 [4,p.4] . A temperature of  $T = 1.5625$  or  $a = .64$  would yield a murder rate (level 8) of 17.7 per 100,000. According to this comparison, the "hottest spots" with failure of the moral code restraint in the U.S. only increase the abstract temperature from 1.4 to about 1.56. Actually the paper by Godoy [4] argues that the violence (level 7) and property (level 6) crime rates in Puerto Rico may be less than the U.S. mainland.

### **Drama Cast Limit**

In the limit as  $T$  goes to infinity, each level of the Moral Code density has the same probability, about .10 or 10% if there are ten levels. The case  $T$  approaching infinity represents the high-stress limit of society (On the other hand as  $T$  goes to 0, everyone is stuck in the middle or average levels in the Gaussian density case.). Since dramas are typically trying to portray high stress situations, in dramas there tend to be about one character to represent each level of the moral code. Thus there is one really good guy (or girl) hero, representative average people, and one really bad character. As the temperature goes up toward infinity, the levels fill out toward the so-called "uniform density" of equal probability in each level, which may be termed the "drama cast limit."

On Table 1 below, the "drama cast limit" would be to the left of the binomial density and would have probability .1 in each level.

### **Conclusion**

The model allows study of many decision-making processes.

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Table I. Comparison of Moral Code Density vs. Temperature

Level	Binom n=9 p=.5	Discrete Gauss a=.22 T=4.5	Iraq War a=.49 T=2.04	Iraq est. 2006	PR a=.64 T=1.56	PR est [4]	US a=.7 T=1.42	US est. [4]
9	.0019533	.0029566	.00001937	.0000117	.000001		.0000003	
8	.0175781	.0174933	.00097649	.0009765	.000177	.00017	.0000891	.00006
7	.0703125	.0663637	.00184713		.008266	.00439	.0059420	.00568
6	.1640630	.1614250	.13113300		.106938	.01883	.0977149	.04052
5	.2460940	.2517620	.34939900		.384617		.396254	
4	.2460940	.2517620	.34939900		.384617		.396254	
3	.1640630	.1614250	.13113300		.106938		.0977149	
2	.0703125	.0663637	.00184713		.008266		.0059420	
1	.0175781	.0174933	.00097649		.000177		.0000891	
0	.0019531	.0029566	.00001937		.000001		.0000003	

Note: Level 9 Iraq War 300+ suicide bombings per year/(256 100,000's or 25.6 million population of Iraq) = 300/256 = 1.17 suicide bombing / 100,000 per year.

Level 8 Iraq War 25,000 civilian deaths/ 256 100,000's population = 25,000/256= 97.65 civilian deaths/ 100,000 per year.

Iraq War estimates for 2006. Other data for 1998 from Reference 4 (Godoy).

Remark: In the limit as T goes to 0, 50% of the population would be in Level 4 and 50% in Level 5.

### **The Evolution of Life and the Mental Structure** **Yoav Yigael**

In this summary, we develop a cognitive evolutionary framework, through which it is possible to define, locate, make connections, and provide basic answers for a line of age-old subjects and questions. Through this framework, we attempt to define Life itself and, on the basis of this definition, suggest a fundamental answer for the mystery of the creation of Life; define the human mental structure and its place; the connection between mind, body and consciousness; and the evolutionary stage which led to their creation. In general, this book develops a cognitive framework that forges a connection between psychology and biology and, at the same time, proposes a unifying theory for all psychological and psychoanalytical theories. The main innovation is in the unification of all of the terms and concepts that relate to the interconnections of a structure - which has an evolutionary logic - within itself. The insights related to the proposed cognitive framework may open up many new research directions and illuminate, from a new and unexpected perspective, the current knowledge of many fields. Naturally, creating a common discursive framework for the fields of biology and psychology, which also relies on known and familiar perspectives and ideas, has required a serious revision of all of today's known and accepted theories, including those of Darwin, Freud, Piaget and others.

The answers to the many subjects which the book deals with are divided into two paths, which meet at their conclusions. The first path traces the construction process of the mental structure and its functions, as part of the evolution of Life. The second path follows several important phases in the general evolution of Life. It is important to note that throughout the book, the term 'evolution' relates to the fact that the species change, rather than Darwin's theory which, although it has contributed more than anything else to our understanding of evolution, his explanation of it is incomplete and certainly not identical with the fact itself. The common assumption of both paths is that Life and its desire to continue and improve – present

in every life form and in the human mental structure – is the most complex and sophisticated expression of the phenomenon of Life.

The point of departure of the first part of the book is the fact that despite the ongoing, intensive activity of over 100 years of psychoanalysis, in many ways it knows no more about the mind than does any intelligent individual: Where is the mental structure located? What is made up of? Even more importantly, psychoanalysis offers neither definition nor description regarding where and how to locate the most basic functions of the mental system: consciousness, will, the “I”, sensation, emotion, desire, language, thought, and so forth. The main idea of the book is that the central mental functions are those which we experience directly, and which are part of the regular language. Professional concepts and terms collected by different populations (id, narcissism, I-skin, a-elements, and many others) are nothing more than empty terms for that which we do not understand. Since Freud, there have been numerous propositions and many different kinds of models to describe the mental structure. Each one maps out the space in a different way, emphasizing different aspects, but they all lack the essential infrastructure for creating an acceptable model – a description of the mental functions and their mission. In fact, academic psychoanalysis and psychology both operate without a body of knowledge, similar to, let’s say, that of anatomy in relation to the field of medicine or that of research in relation to the field of physiology.

As was mentioned, the first part of the book focuses on the question of the mental structure: defining the mental functions and describing their location and mission. The point of departure is that, similar to the way in which the body is created, the mental level is also a result of evolution and is constructed through a differentiation process according to a dictated plan. Unlike the physiological level, however, where the majority of the selection process occurs during the pregnancy period – the mental level begins the selection process at birth. Over a period of 18 years, it then matures and becomes responsible for sustaining life. Like the body, the mental level also begins from a very simple organizational level – similar to a reflex – after which more complex functions are gradually selected.

The main axis of the process is the ‘I’ function, which is present at every organizational stage in the mental structure. All of our known compulsions and desires are expressions of Life’s three general drives: to exist and survive, to multiply, and to become more sophisticated – and these are also the drives that manage the differentiation process. All of the destructive desires and death wishes (which are beyond the constraints of reality), are in fact different types of attempts to compensate for distortions and errors in the differentiation process, as well as the result of desperate attempts on the part of mental forces that were repressed during the differentiation process and are trying to break out. The human mental structure is a sort of self-operating program. Although its rules are pre-determined, it needs guidance as to how to execute these rules. If we don’t mention this program, we won’t be able to know how to properly accompany the learning process of the system itself.

The reconstruction of such a complex and precise process cannot be based on guesswork and hypotheses. The methods used during every stage of the reconstruction are based on the works of well known scholars such as Darwin, Child (an American physicist who focused on the development of the nervous system), Claude Bernard (known as the father of experimental physiology), Freud, Piaget and others. Another part is based on the works of the author, who has been studying the different aspects of the mental abilities for more than 20 years. An additional aspect is based on the tools of psychoanalysis - mainly its ability to share the subject’s point of view – the one who is undergoing the change (or selection) process, and from there, to follow the considerations that guide its management.

Psychotherapy, as it operates today, is based on correct observations and subtle intuition, but its conceptual framework is both erroneous and misleading and cannot direct therapeutic treatment in the necessary and proper directions. In effect, the generalizations and implications of psychoanalytic theories reflect its failure to recognize the developmental stages of mental organization – as an evolutionary given. The first part of the book suggests a revision of the existing theoretical and clinical knowledge. The practical revision is based on the author’s clinical experience and on the possibility of directing treatment towards places that have, as yet, remained unidentified. The basic tools of psychotherapy remain intact and valid, for the most part – it is only their mission which demands a change.

The second path is organized according to two assumptions: A. The origin of Life and the definition of Life are, in fact, identical: the forces and principles that first created Life continue to operate in all life forms. B. The subject and object of evolution are not the species (as Darwin assumed) or genes (as Dawkins assumed), but rather Life itself. The organisms and their genes are the embodiment of Life – but they are not Life itself. In accordance with these assumptions, I propose a basic definition for the phenomenon of Life and examine



several phases of evolution, wherein the life force tries to improve itself (the creation of the nervous system, the creation of the mental system, the creation of language). Each phase is based on different principles than the previous phase. A basic solution is proposed for the mind-body question, the term consciousness is defined, and the place wherein the mental structure resides is also proposed (nervous activity, which is not identical with the physiological structure of the nervous system). Over the course of evolution, the human mental structure has undergone a transformation, which allows it to be aware of itself, as a part of the phenomenon of Life. This fact teaches us that the ongoing improvement and evolution of Life can no longer simply take place 'blindly', but is rather dependent on our ability to - clearly and with awareness – understand the entire process and how it should be continued in the best possible way. This part proposes a revision of the way in which we perceive evolution and our place in it – as the first species to have a sense of awareness and responsibility towards continuing and improving the evolutionary process.

One of the study's conclusions is that the activity of all life forms and their systems, including the human mental structure (as regards their internal organizational levels), is a combination of two opposing forces. Every life system comprised of several organizational levels - regardless of whether we are speaking about a sub-system made up of several organizational levels, like the mental system or the organism in general – is made up of a physical level and a mental level. Hence, their activities, at any given time, will always be a combination of two opposing forces: the existential force and the dominance force; the earlier the level (phylogenetic and ontogenetic), the higher its existential value, and the lower its control over behavior (the body). Alternatively, the more advanced and complex the level (the mental structure as regards its organization level), the higher the ability to control the organism's behavior in general will be, while the existential value decreases. The practical significance of this type of structure is that under difficult survival conditions, the considerations of the lower levels control and determine the system's actions and priorities. On the other hand, under comfortable survival conditions, the higher levels determine the priorities. However, at least as regards the human race, this system fails to operate properly in many cases, because during the developmental process of the mental system, many errors occur. As a result, subjects that belong to the higher levels of organization receive an existential significance (all types of beliefs and opinions). The opposite is also true: real survival issues are perceived as being secondary (the preservation of life itself).

In general, the book shows how the two paths – psychology and biology – echo, cross over, and support one another. However, because the human mental structure is also a peripheral product of evolution, as well as the only structure for which guidelines were dictated only up until adolescence, after reaching adolescence, there is no plan or program about what we are meant to do with our lives and how we are meant to improve ourselves. In other words, both paths place a mirror in front of each and every one of us – a mirror which is difficult to look into. Still, there is hope and promise in this mirror: On the one hand, a product may be damaged during the differentiation process because we have no idea how to properly manage this process; on the other hand, there is no real cruelty, evil or death threat in the true essence of Life itself. These forces are rather side effects of the gap between what we are meant to be and what we actually are. If we can learn to manage and execute the dictated plan in a better way – Life can look and be very different. This is a plan based on knowledge accumulated over billions of years – it is worthwhile for us to know it and recognize it – there is no other plan. This, our history, has an immensely important cumulative value; and it is our most meaningful and significant inheritance.



# MEETINGS AND CONFERENCES

## THE FIFTY-FOURTH MEETING OF THE INTERNATIONAL SOCIETY FOR THE SYSTEMS SCIENCES July 18-23, 2010

Wilfrid Laurier University, Waterloo, ON, Canada  
Governance for a Resilient Planet

With special workshops on Systems Education, July 17-18, 2010

The 2010 Conference of the International Society for Systems Sciences will be held July 18-23 at Wilfrid Laurier University in Waterloo, Ontario Canada. Its theme will be Governance for a Resilient Planet: meeting the challenge of using the knowledge we have to govern our affairs in government, in business and in the non-profit world. Waterloo is a high tech center with Wilfrid Laurier University, the University of Waterloo, and the Centre for International Governance Innovation in town and Guelph University nearby. It is also home to a number of high tech companies; notably Research in Motion, the makers of the Blackberry mobile phone/PDA.

Wilfrid Laurier University is a compact campus with most facilities within one large block. Conference sessions will be held in the new academic building. Reasonably priced dormitory apartment accommodation is available within a couple of minutes walk of the conference location. Apartments consist of a shared living room and kitchen facility and four bedrooms sharing two baths. The dining hall is a short walk across the quad. Rates will be reasonable – around \$55-60 per night, including breakfast, and there will also be reasonably-priced standard hotel accommodation available nearby.

Waterloo is about 70 miles from Toronto and is served by Pearson International Airport (YYZ) for international and long distance flights and by a Waterloo local airport for short haul flights. Shuttle buses from Pearson Airport are available. We encourage those interested in attending the conference to submit an abstract for a full paper or poster, or organize a workshop or other event, and begin working with us in creating this important event. We look forward to seeing you in Waterloo.

### Invited Plenary Guest Speakers

Michael Ben-Eli - New York City  
Pille Bunnell - Vancouver, B.C.  
Ron Cottam - Belgium  
Ranulph Glanville - Portsmouth, UK  
Debora Hammond - Sonoma, CA  
Thomas Homer-Dixon - Guelph  
Javier Livas - Mexico City  
Alanna Mitchell - Toronto  
Markus Schwaninger St. Gallen, Switzerland  
Mark Van Clief - Burlington, ON  
David Waltner-Toews - Guelph  
Alan Willis – Mississauga, Canada

### Call for Papers

Although the conference will accept papers related to the following areas of research, the list is neither exclusive nor restrictive. Each session chair takes the final responsibility for running his/her session. All submitted papers are encouraged to state how relevant the paper is with regard to systems thinking, systems modeling and/or systems practice. The areas listed below have additional contact and content information listed for each specific SIG. See the conference webpages.

Areas proposed by existing Special Integration Groups (SIGs) and current exploratory groups:

### **SIGs**

Agent-based Social Systems Sciences  
Aging Systems  
Balancing Individualism and Collectivism  
Critical Systems Theory and Practice  
Designing Educational Systems  
Evolutionary Development  
Health and Systems Thinking  
Hierarchy Theory  
Human Systems Inquiry  
Information Systems Design & Information Technology  
ISSS Roundtable  
Living Systems Analysis  
Organizational Transformation & Social Change  
Research Towards General Theories of Systems  
Socio-Ecological Systems  
Spirituality and Systems  
Student SIG  
Systemic Approaches to Conflict and Crises  
Systems Applications in Business & Industry  
Systems Biology and Evolution  
Systems and Mental Health  
Systems Modeling & Simulation  
Systems Pathology  
What is Life/Living

### **Exploratory Groups**

Arts Based Inquiry  
Foundations of Information Systems  
Monetary Systems  
Systems Engineering  
Service Science

In addition to paper presentations, the Student SIG and Roundtable will organise sessions, and there will be Mini-Conversations, based on interactions from the field trip experiences. Anyone who is interested in these sessions is welcome to participate in them without prior notice; no papers or abstracts are required in these sessions.

## **OTHER CONFERENCES**

**3rd Workshop on Information Logistics and Knowledge Supply  
(ILOG 2010) in conjunction with  
13th International Conference on Business Information Systems, BIS 2010  
Berlin, Germany  
May 3-5, 2010**

Workshop homepage: [http://bis.kie.ue.poznan.pl/13th\\_bis/wscfp.php?ws=ilog2010](http://bis.kie.ue.poznan.pl/13th_bis/wscfp.php?ws=ilog2010)

For many enterprises, it is of decisive strategic importance to optimize the internal information flow and to implement an efficient reuse of existing knowledge. Especially in knowledge-intensive industry and service sectors, information is a major factor in production processes, and knowledge reflects an important asset of the enterprise. Similarly, public organizations and governmental bodies are dependent on accurate and timely information supply for efficient and high quality processes and services. Intelligent information supply has become an important issue that is characterized by just-in-time, demand-oriented and context-sensitive information.

Experience shows that successful solutions for intelligent information supply involve several ingredients: a sound business case with clearly defined benefits and returns for the (networked) organization, a clear

understanding of the user's demand including the organizational context, and the right use of "enabling technologies" like semantic technologies, knowledge management or ubiquitous computing.

This workshop aims to bring together people who have strong interest in information logistics and knowledge supply. We would like to invite researchers and practitioners from both industry and academia to submit original results of their completed or ongoing projects. We encourage broad understanding of possible approaches and solutions for information logistics and knowledge supply. Specific focus will be on practices of, i.e. we encourage submission of case study and experiences papers, and of contributions bringing together business cases and enabling technologies.

**Second International Symposium on Process Organization Studies**  
**Theme: Constructing Identity in and around Organizations**  
**11-13 June 2010, Rhodes, Greece**

**Keynote Speakers:**

Michael G. Pratt, Professor of Organization Studies, Boston College, USA, Associate Editor, Academy of Management Journal

James V. Wertsch, Marshall S. Snow Professor in Arts & Sciences, Washington University in St. Louis, USA, author of *Mind as Action* and *Voices of Collective Remembering*

James Williams, Professor of European Philosophy, University of Dundee, UK, author of Gilles Deleuze's *Logic of Sense: A Critical Introduction and Guide*

**Rationale: A Process Perspective**

Process Organization Studies (PROS) is a way of studying organizations that unfolds from process metaphysics – the worldview that sees processes, rather than substances, as the basic forms of the universe. A process orientation prioritizes activity over product, change over persistence, novelty over continuity, expression over determination. Becoming, change, flux as well as creativity, disruption, and indeterminism are the main themes of a process worldview.

Seeing process as fundamental, such an approach does not deny the existence of states, events, and entities, but insists on unpacking them to reveal the complex processes involved in - the sequences of activities and transactions that take place and contribute to - their constitution. As process philosopher Nicholas Rescher notes, "the idea of discrete "events" dissolves into a manifold of processes which themselves dissolve into further processes". A process point of view invites us to acknowledge, rather than reduce, the complexity of the world and, in that sense, it is animated by what philosopher Stephen Toulmin calls an "ecological style" of thinking.

A process view rests on an anti-dualist and relational ontology, namely the recognition that everything that is has no existence apart from its relation to other things, and, therefore, long established dualisms such as mind and body, reason and emotion, humanity and nature, individual and collective, organism and environment, agency and structure, ethics and science, need to be overcome. Focusing on inter-actions is preferred to analyzing self-standing actions.

A process orientation is sensitive to the constructive role of embodied-cum-embedded agency in bringing about the world we come to experience as an independent structure and to the experiences generated by human and non-human agency. Unlike substances, which do not include one another but are seen as nested, standing under one another – sub-stantia -, experiences include other experiences and grow out of the integration of bodily and mental events into something new. Cognition and symbolic interaction are understood to be embedded into ways of life and arising from embodied interactions with the world, mediated by artifacts. Temporality is a constitutive feature of human experience, and processes unfold in time. Human phenomena cannot be properly understood if time is abstracted away.

**Purpose, Venue, and Organization**

The aim of this Symposium is to consolidate, integrate, and further develop ongoing efforts to advance a sophisticated process perspective in organization studies. It is important for the vigorous intellectual development of the field and its relevance to the world of practice that the implications and resonance of the process worldview for organization studies be appreciated and sustained, rather than just dallied with as an engaging side-line in the prevailing analytic language game. We live in a world of processes although

we often try to comprehend it in the vocabulary of substances. Aligning our conceptual vocabulary with our organizational experience is an important aim of the Symposium.

The Symposium is an annual event organized by the new annual volume *Perspectives on Process Organization Studies* (Editors: Ann Langley and Haridimos Tsoukas), published by Oxford University Press, and it takes place in a Mediterranean island, in early summer each year. The First Symposium took place at Columbia Beach Resort, Pissouri, Cyprus (<http://www.columbia-hotels.com/english/index-zypern.html>), 11-13 June 2009. Its structure, themes and abstracts can be seen at [www.alba.edu.gr/pros](http://www.alba.edu.gr/pros). About 50 papers are usually accepted, following a review of submitted abstracts by the conveners. Authors of accepted papers will have the opportunity to interact in depth and share insights in a stimulating, relaxing, and scenic environment.

The Second Symposium will take place at the Elysium Resort & Spa ([www.elysium.gr](http://www.elysium.gr)), in the island of Rhodes ([www.rodosislandinfo.gr](http://www.rodosislandinfo.gr), [www.holiday.gr](http://www.holiday.gr)), Greece, on 11-13 June 2010. The Symposium venue, comfortable, beautiful, and situated by the sea, will provide an ideal setting for participants to relax and engage in authentic and creative dialogues.

The Symposium is organized in two tracks:

1. One is the General Track, which includes papers that explore a variety of organizational phenomena from a process perspective. More specifically, although not necessarily consolidated under a process metaphysical label, several strands in organization studies have adopted a more or less process-oriented perspective over the years. Karl Weick's persistent emphasis on organizing and the important role of sensemaking in it is perhaps the best known process approach. Henry Mintzberg's, James March's, Andrew Pettigrew's, and Andrew Van de Ven's work on the making of strategy, decision making, organizational change, and innovation respectively, also shows an clear awareness of the importance of process-related issues. Current studies that take an explicitly performative (or enactivist, or relational) view of organizations have similarly adopted, in varying degrees, a process vocabulary, and have further refined a process sensibility. Indeed, the growing use of the gerund (-ing) indicates the desire to move towards dynamic ways of understanding organizational phenomena, especially in a fast-moving, inter-connected, globalized world.

Since a process worldview is not a doctrine but an orientation, it can be developed in several different directions, exploring a variety of topics in organizational research. For example, traditional topics such as organizational design, leadership, trust, coordination, change, innovation, learning and knowledge, accountability, communication, authority, self-organization, technology, etc, which have often been studied as "substances", from a process perspective can be approached as situated sequences of activities and complexes of processes unfolding in time. Perspectives drawing on post-rationalist philosophies, social constructivism, discourse and narrative theory, practice theory, actor network theory, path-dependence theory, complexity science, Austrian economics, socio-cultural, discursive and ecological psychology, activity theory, business history, ethnomethodology, and symbolic interaction are examples of a process orientation to the study of organizational phenomena that treats them not as *faits accomplis* but as (re)created through interacting agents embedded in discursive practices, whose actions are mediated by institutional, linguistic and objectual artifacts.

2. The second is the Thematic Track, which includes papers addressing the particular theme of the Symposium every year. For 2010 the theme is *Constructing Identities in and around Organizations*.

More specifically, constructing identities – those processes of social construction through which actors in and around organizations co-construct, negotiate, stabilize, maintain, reproduce disrupt, destabilize, repair or otherwise change their sense of selves and others – has become a critically important topic in the study of organizations. Departing from early conceptualizations which posited organizational identity as those aspects of their organization that members perceive as central, enduring and distinctive (Albert and Whetten, 1985), recent research has studied identity as relational and dynamic, formed through interactions, associations and conversations; "organizational identity is not an aggregation of perceptions of an organization resting in peoples' heads, it is a dynamic set of processes by which an organization's self is continuously socially constructed from the interchange between internal and external definitions of the organization offered by all organizational stakeholders" (Hatch & Schultz, 2002: 1004). Identity is thus an ongoing accomplishment; processes of constructing identity are open to contestation and as productive of fragmented, fluid selves characterized by multiple, contradictory narratives as of convergent, stable ones.

Further, identity construction is historically situated in time and space: "the various categorizations that constitute identity and their meanings are not fixed but change over time, in different contexts, and as a result

of ongoing language use" (Maguire & Hardy, 2005: 15) such that "informed analysis of identity construction in an organizational setting has to acknowledge the socially and discursively constructed nature of the self" (Kärreman and Alvesson, 2001: 63).

In this year's Thematic Track, we encourage empirical and/or conceptual submissions that address the relationships between constructing identities and organizing, and particularly those that push understanding of these concepts and their relations into new or underdeveloped areas. Submissions may address, but need not be confined to, topics such as: processes of constructing, negotiating, maintaining, repairing or changing identities in or around organizations; identity emergence or collapse; processes of identification and identity work; processes of managing, influencing or directing identity; the construction of identities in different organizational (e.g. NGOs v. private sector; professionalized v. non-professionalized fields; etc.), strategic (e.g. mergers and acquisitions v. spin-offs v. joint ventures or collaborations, etc.), or cultural (e.g. different national or regional cultures) contexts; identity dynamics and the temporal dimension of identity construction; the role of technology, artifacts, the body, emotions or aesthetics in identity construction; narratives and storytelling in identity construction; the relationships between identity and related concepts such as image, culture, reputation, branding, communication, etc.; the processes of practicing identity; the relationships between identity processes and other important organizational concepts such as power, institutions, networks, strategy-making, trust, etc.; different methods for studying identity processes (e.g. ethnography, discourse analysis, quantitative approaches, etc.); or different paradigmatic perspectives on identity processes (e.g. critical realism, post-structuralism, etc.).

Following a rigorous review process, a selection of papers will appear in the second volume of Perspectives on Process Organization Studies in 2011.

#### Submissions

Interested participants must submit to Haridimos Tsoukas ([process.symposium@gmail.com](mailto:process.symposium@gmail.com)) an abstract of about 1000 words for their proposed contribution by January 31st, 2010. The submission must be made via email and it must be a Word attachment. It should contain authors' names, institutional affiliations, email and postal addresses, and indicate the track for which the submission is made (General or Thematic), while the subject matter line of the email should indicate "Process Symposium". Authors will be notified of acceptance or otherwise by February 28th, 2010. Full papers will be submitted by May 15th, 2010.

**HELLENIC SOCIETY FOR SYSTEMIC STUDIES (HSSS)**  
**6th. National & International Conference**  
**23 - 26 June, 2010**  
**<http://www.hsss.gr/hsss06>**

University of the Aegean, School of Social Sciences, Department of Sociology, Lesvos Island, Greece.

Systemic Approaches in Social Structures email: [hsss06@soc.aegean.gr](mailto:hsss06@soc.aegean.gr)

**The 14th World Multi-Conference on Systemics, Cybernetics and Informatics:**  
**WMSCI 2010 (<http://www.2010iisconferences.org/wmsci>)**  
**June 29-July 2, 2010**  
**Orlando, Florida, USA**

You can also submit your abstract-paper to another area or any of the following conjoined and/or collocated events:

The SUMMER 4th International Conference on Knowledge Generation, Communication and Management: KGCM 2010 ([www.2010iisconferences.org/kgcm](http://www.2010iisconferences.org/kgcm))

The 3rd, International Symposium on Academic Globalization: AG 2010 ([www.2010iisconferences.org/ag](http://www.2010iisconferences.org/ag))

The 2nd International Symposium on Peer Reviewing: ISPR 2010 ([www.2010iisconferences.org/ispr](http://www.2010iisconferences.org/ispr))

Participants in any conference can attend the sessions of other collocated conferences, and will receive electronic proceedings, in a CD, which includes the papers presented at all conferences and symposia



Submissions for Face-to-Face or for Virtual Participation are both accepted. Both kinds of submissions will have the same reviewing process and the accepted papers will be included in the same proceedings.

Pre-Conference and Post-conference Virtual sessions (via electronic forums) will be held for each session included in the conference program, so that sessions papers can be read before the conference, and authors presenting at the same session can interact during one week before and after the conference. Authors can also participate in peer-to-peer reviewing in virtual sessions.

All Submitted papers/abstracts will go through three reviewing processes: (1) double-blind (at least three reviewers), (2) non-blind, and (3) participative peer reviews. These three kinds of review will support the selection process of those papers/abstracts that will be accepted for their presentation at the conference, as well as those to be selected for their publication in JSCI Journal.

Authors of accepted papers who registered in the conference can have access to the evaluations and possible feedback provided by the reviewers who recommended the acceptance of their papers/abstracts, so they can accordingly improve the final version of their papers. Non-registered authors will not have access to the reviews of their respective submissions.

Registration fees of an effective invited session organizer will be waived according to the policy described in the web page (click on 'Invited Session', then on 'Benefits for the Organizers of Invited Sessions'), where you can get information about the ten benefits for an invited session organizer. For Invited Sessions Proposals, please visit the conference web site, or directly to [www.2010iisconferences.org/wmsci/organizer.asp](http://www.2010iisconferences.org/wmsci/organizer.asp)

Authors of the best 10%-20% of the papers presented at the conference (included those virtually presented) will be invited to adapt their papers for their publication in the Journal of Systemics, Cybernetics and Informatics.

**ISSEO—International Summer School in Ecological Ontology**  
**UNDERSTANDING SYSTEMS**  
**Castello Tesino and Cinte Tesino, Italy**  
**July 5-9, 2010**

Understanding and managing systems are complementary phases of an informed decision making process. ISSEO 2010 aims at providing new intellectual tools for developing a culture of sustainability.

Modern science relies on an essentially analytic strategy. Different sciences have been developed in order to efficaciously segment the whole of reality into classes of more or less uniformly connected phenomena. This divide et impera (divide and rule) strategy has proved immensely successful, at least for some regions of reality. Other regions have proved more refractory, for a number of serious reasons. The first is that different regions may require different types of causation, some of which are still unknown, or only partially known. A second reason is that for some regions of reality the analytic strategy of breaking items down into pieces does not work properly. These regions contain items that depend not only on their parts, but also on the whole that results from them, and eventually also on higher-order wholes of which they are parts (e.g., organisms, communities).

Admittedly, our understanding of non-fragmentable items is still deficient. Otherwise stated, there is no denying that a properly developed method of synthesis needs to be developed. The availability of both strategies (analytic and synthetic) will enable the development of a more articulated, integral, respectful and responsible vision of the world.

The most advanced synthetic methodology actually available is represented by system theory, a theory that during the past fifty years has enjoyed alternating phases of tumultuous development and apparent decline. Broadly speaking, a system is a dynamical whole able to maintain its working conditions. The main result achieved by this preliminary understanding of a system has been the proof that the system as a whole is defined by properties not pertaining to any of its parts – a patently non-reductionist view.

Fabio Caporali, Jesper Hoffmeyer, Roberto Poli, Robert Ulanowicz

Notes for applicants:

1. People wishing to participate should send an e-mail message to [roberto.poli@soc.unitn.it](mailto:roberto.poli@soc.unitn.it) <<mailto:roberto.poli@soc.unitn.it>> before 30 April 2010, submitting their curriculum vitae and a short statement of interest (about 1 page).



2. Notification of acceptance and detailed program will be provided in due course.
3. Attendance to the school will be limited to about 30 participants.
4. Lodging and meals will be offered by the organization.
5. All lectures will be in English. Each speaker will give 4 lectures, with ample time for discussion.
6. The lectures will be given in the conference room of the Centro Studi Alpino della Università della Tuscia nell'Alto Piano del Tesino, starting July 5, at 9 a.m.

**EURO XXIV Conference  
Lisbon, Portugal  
July 11th-14th, 2010**

This is an invitation to collaborate with the stream "System Dynamics Modelling and Simulation" at EURO XXIV, which will take place in Lisbon, Portugal, from July 11th to 14th, 2010. This is the 24th European Conference on Operational Research. The website can be found under <http://www.euro2010lisbon.org/>. It offers a first demonstration of the scientific strength of this conference and of the wonderful environment it is embedded in.

Being responsible for the stream "System Dynamics Modelling and Simulation", we would very much appreciate your contribution.

The general purpose of this stream is to bring together contributions about the modelling of complex systems, based on the System Dynamics methodology. Contributions from the fields of organization and management, engineering, economics, sociology, and ecology are particularly welcome.

Please submit your abstract until February 28, 2010 to [Stefan.Groesser@unisg.ch](mailto:Stefan.Groesser@unisg.ch)

**54th Annual Meeting of the International Society for the Systems Sciences  
Governance for a Resilient Planet  
18 July 2010 to 23 July 2010  
Wilfrid Laurier University, Waterloo, Canada**

With a two-day pre-conference workshop on the design of systems education programs, July 17-18, 2010

This conference will bring together researchers, professionals and influential decision makers facing far-reaching, real-world issues of complex systems, sustainability and resilient governance systems.

Enquiries: [isssoffice@dsl.pipex.com](mailto:isssoffice@dsl.pipex.com)

Web address: <http://iss.org/world>

**1st International Workshop on Complexity and Real World Applications  
Using the Tools and Concepts from the Complexity Sciences to Support Real World  
Decision-making Activities  
Botleigh Grange, Near Southampton, England  
July 21-23, 2010**

ISCE Publishing, US; Decision Tools, UK

Alice Munro, the Canadian writer, once said, "The complexity of things—the things within things—just seems to be endless. I mean nothing is easy, nothing is simple." The more time we spend studying complexity, the more her sentiments are shared.

Of course, the very pervasiveness of this complexity is the reason we gravitate towards it—like basin-dwelling moths to the attractor flame. The increasing number of "complexity"-focused journals stands as a testament to the progress that is being made in this young discipline.

Our passion, however, lies in the possibility of releasing all these ideas into the wider ecosystem. While many of the more beguiling concepts have embedded themselves in everyday language, complexity thinking, as a formal discipline, is clearly much less widespread. There are islands of success, but the intellectual tectonic shifts required to make them continents have not been forthcoming.

Why is this? Maybe it's partially down to the packaging. Complexity thinking is hard. Much of the research draws on sophisticated philosophy. This hinders the broad adoption of the ideas in the professional mainstream. The fact that the amount of research in the area of tools is dwarfed by that in the areas of philosophy and theory serves to compound the problem. A rough analysis of the papers published in the journal *Emergence: Complexity & Organization*, for example, in 2007 shows that less than 10% of them were primarily concerned with the development of tools for practitioners.

There is no doubt that the packaging of complexity into a neat, user-friendly shrink-wrapped "box" is a tall order. It's difficult enough to just describe the damn thing! Maybe this is because we've been gradually increasing the complexity of complexity. As we've experienced the failures of the systems engineering paradigm, and seen the limitations of "new reductionism", our definition of complexity has become increasingly elaborate. Naturally, this has trickled down the pipeline to challenge the tool developers.

But, maybe we can best approach tools from another theoretical direction—and use our understanding of complexity to evaluate and enhance them. Richardson (2008) has discussed the notion of a "modeling culture" where a practitioner uses linear tools in a nonlinear manner. This results in a kind of "cyborg" tool where man is responsible for providing the complex context. However, as complexity researchers, surely we'd like to provide man with more assistance in this area.

The motivation for this workshop is to further this endeavor. The organizers want to receive submissions that focus on real world applications of complexity thinking. Theory will certainly not be discouraged, but it must be followed by at least one case in which the theory-informed tool that was developed was used (successfully or not) to aid a real world decision-maker. By this we do not mean the application of a complexity framework to reinterpret a past event. Furthermore, we are very keen to attract those from outside the "traditional" complexity community—such as software developers, for example. The development of tools sensitive to complexity requires a multi-/cross-disciplinary effort, and the "complexity" community does not hold any particular claims to having the best language and concepts to confront and manage complexity. For example, much of the development in the complexity community over the past 15-20 years had already occurred within the soft systems community, and from both communities, simultaneous efforts have unfolded that, although approach matters from different directions, share similar aims, philosophies, and methods.

In order to provide at least some basic topical guidelines for the boundaries of the event, a number of characteristics of "complexity-sensitive" tools are listed below. These are presented purely for guidance—please feel free to ignore our "arbitrary" framework if you have better ideas.

### **Boundary critique**

The process of boundary critique is arguably the key feature of complexity thinking. We view this as the central element, with the remaining elements we will define being corollaries of the commitment to it.

Life is defined by where we draw the lines. The fact that defining these boundaries is so difficult is part of what makes life interesting. All boundaries are no more than temporary patterns resulting from a filtering process (e.g., based on personal values). As such, they are to some degree arbitrary (at the same time both quasi-objective and inter-subjective) and require ongoing review to understand how they shape our context of interest—and how our context of interest shapes them.

### **Pluralism**

Given the non-reality of all boundaries (...very Buddhist...) we cannot rely completely on any one perspective. All perspectives are ideals and the real world is not idealistic. Mono-paradigmatic approaches are risky as they only tell part of the story.

Perspective is being used here in the broadest possible sense. It refers to individual opinions as well as particular methodologies. In a sense, these perspectives can be equated with stakeholders as they all have a vested interest in being recognized as relevant and important in the war of ideas—a kind of evolutionary memetics.

Being aware of multiple perspectives equips you for more effective boundary critique, of course. This is one of the processes that helps provide crowds with their wisdom.

## **Synthesis**

Synthesis is closely related to pluralism. It relates to the attempt, through the use of boundary critique and pluralism, to tailor descriptions (models) to the context of interest, rather than have the model shape the context. Or, to put it another way, have the dog wag the model tail, rather than vice versa.

Of course, it is never this simple. By definition, the context of interest must pay some lip service to the model. If not, the model would have to be as complex as the reality it seeks to explain. It is quite reasonable to take a particular context and evolve it so that it can be more easily understood through a model. The key is that the “evolution” is reflected in the real world and is not just something that happens in the mind of the analyst. So, through boundary critique, an incoherent plurality is beaten and brutalized into a context specific and provisionally synthetic whole.

This synthetic whole can still only be a bastardization of the real world. It can only, therefore, be a tool for thought, rather than a proxy for reality. We need to maintain some ontological distance from our constructions. The commitment to “boundary critique” and “pluralism”—and maybe “improvement”, as in Critical Systems Thinking—is more important than the final model itself.

## **Emergence**

The starting point of an analysis should not completely predetermine the end point of the analysis. This should lead us to be wary of purely systematic approaches. We need the flexibility and confidence to wander through “analysis space” (evolving as a consequence of our boundary critiques) in a way that acknowledges the emerging view of the real world, rather than the favored method / methodology. In addition, we need to recognize that the real world will collectively conspire to respond to our design interventions in a variety of ways—some of them not considered by the “designers”.

This requires us to engage in a tricky balancing act. Being overly prescriptive leads to narrow-minded analysis, while “anything goes” analysis can lead nowhere. Emergence requires some kind of container to filter out the cacophonous noise of reality. The structure of that container, however, should not remain fixed or overly restrictive.

## **Timeliness**

Although the allocation of boundaries (in both space and time) is essential to “doing stuff”, control/design in complex systems is a never ending process. Most models used in support of decisions will, at best, only have short-term applicability. To guide any complex system in a particular direction requires ongoing analysis and intervention. And, of course, with the analyst being part of the complex system he seeks to affect, the notion of a “particular direction” will itself evolve. No room for long-term dogmatism here!

## **Event Format**

The event is deliberately called a “workshop” as number will be limited to no more than 20 participants. It is planned that the presentations given will be used as much as a source for further discussion as they are platforms for individual speakers to present their tools. As such, the bulk of the time will be set aside for structured discussion of the tools presented—and ideas for future tools.

An ISBN-referenced proceedings will be available in print shortly after the event (and available to non-participants on order—complementary copies will be provided for each workshop participant). A special issue of the journal *Emergence: Complexity & Organization* may also be produced depending on the number of submissions received. Paper submission is not a prerequisite for attendance, but authors of accepted papers will be given priority.

## **Provisional Timetable**

Please let Kurt Richardson (kurt@isce.edu) know of your interest in attending this event as soon as possible. Attendance at the event will be strictly limited to 20 so as to encourage genuine dialogue amongst participants - selection of attendees will be determined simply on a first-come first-served basis (with the additional consideration of paper relevance, of course).

A block of rooms has been reserved at the Botleigh Grange and a special rate negotiated of 77 Pounds Sterling per night (which includes breakfast).

Extended abstracts of around 1000 words to be submitted to Dr. Kurt Richardson (kurt@isce.edu) by end of March, 2010—but please notify us of your interest as soon as possible.

The decision by the review board (comprised of members of the hosting organizations) invite submission of a full paper—to be no longer than 5000 words—will occur by end of April, 9, 2010. Please note that paper submission is not a pre-requisite for attendance, but that priority will be given to paper contributors.

Full papers to be submitted by end of June, 2010, to give enough time to prepare them for distribution to all participants before the event itself.

The cost of registration will be US \$595 and must be paid in full at the time of final paper submission - a registration form will sent to participants after the decision regarding paper acceptance has been made. As well as administrative and location costs, fees will also cover lunch and coffee/tea breaks during the event as well as a dinner event at the close of the first day. A copy of the published proceedings is also included. Participants will be responsible for their own hotel costs.

If you would like to attend the workshop please send an email to Kurt Richardson (kurt@isce.edu) with the following information: Name, affiliation and position (if any), address, phone, fax, and email. Kurt will contact you with further information regarding hotel confirmation and payment of workshop fees.

If you have any questions please do not hesitate to contact Kurt (kurt@isce.edu).

**The 28th International Conference of The System Dynamics Society**  
**July 25 – 29, 2010**  
**Seoul, Korea**  
**Hosted by: Korean System Dynamics Society**  
**([www.ksds.net](http://www.ksds.net))**

Seoul, Korea is one of the most dynamic capital cities in the world with an abundance of cultural and historic heritage. Located on the Han River, Seoul started as the capital of the Baekje Kingdom in 18 BC. Since the 1960s Seoul has experienced rapid economic development and has been called the “Miracle on the Han River.” It has grown to over ten million people and is Korea’s largest city—one of the most densely populated cities in the world. Its rapid economic, social, and technological progress has played a key part in Korea’s development. Seoul is now taking a leading role in green development for Korea.

### **Venue**

Nestled in Songpa-gu, on the south side of the Han River, the Seoul Olympic Parktel has perfect features for international gatherings and is a landmark in the heart of Seoul’s sports district. The Seoul Olympic Parktel vividly reflects the proud history of Seoul hosting the 1988 Olympic and Paralympic Games. Surrounded with panoramic views of the Olympic Stadium, Olympic Park, Mongchon Fortress, and Han River, the environment-friendly hotel and its beautiful outdoor surroundings will offer everlasting excitement and memories. Furthermore, the Youth Hostel within the Seoul Olympic Parktel property guarantees alternative accommodations geared towards less expensive, but cozy lodging.

For detailed information about the Seoul Olympic Parktel please visit [here](#).

### **Program**

The main theme will be Beyond the Crisis: Greening Society, the Economy, and the Future, reflecting global concerns about the environment and economic problems. The program will consist of invited and contributed sessions and workshops demonstrating the state of the art in the theory and application of system dynamics. The program schedule will also include exhibits, model assistance workshops, panel discussions, special sessions, a student colloquium, and Society business meetings. There will be time for social and professional interaction in a relaxed and fascinating setting.

The conference will bring together diverse perspectives on the application of system dynamics to important local and international issues, and the practical use of system dynamic tools to address critical real-world challenges. A small sampling of topics to be addressed includes:

- Regional, national, and global economic dynamics
- Environmental and ecological challenges
- Health care policy
- Agent-based and evolutionary modeling
- Industry evolution: interactions of competition and organizational capabilities
- Corporate strategy
- Organizational change and improvement in business and beyond

Project management and product development  
Public safety and security  
Dynamic decision making and experimental studies  
Nonlinear dynamics  
Public policy applications  
Dynamics of information systems  
Developments in simulation tools and techniques for model analysis and visualization  
Advances in the modeling process and group model building  
System dynamics contributions to theory building in the social and natural sciences  
Teaching systems concepts and dynamics in the K-12 grades, universities, and beyond

Submissions are encouraged on the conference main theme Beyond the Crisis: Greening Society, the Economy, and the Future and on the topics of climate change and energy transition. A special new subject will be Eastern philosophy and systems thinking. We encourage your submissions and interest.

Bonus Day will be continued in 2010. The extra day, July 30, will be useful for groups that wish to organize informally. Chapters and interest groups will have an opportunity to share information in much greater depth. Bonus Day activity proposals are due November 15, 2009; send to [programchair@systemdynamics.org](mailto:programchair@systemdynamics.org)

### **Submissions**

Papers may be submitted from January 2 through March 22, 2010 and must be in sufficient detail for the referees to judge their meaning and value. Submissions must be in English and should be 5-30 pages in length (there is also a maximum 2 MB electronic file size). Work already published in a journal, in English, should not be submitted. Inclusion of models and other supporting materials to enable replication and aid the review process is encouraged in all cases (maximum file size 2 MB in addition to the paper). For more details on paper submissions see the conference website.

Each paper must have a designated presenter and one individual can be a designated presenter for at most two works. Due to scheduling demands, designated presenters not registered by June 2, 2010 will have their papers automatically removed from the schedule. All attendees, whether presenting or not, must register for the conference.

All works submitted will be assigned for double blind peer review. The results, with the oversight of the program chairs, will determine whether a work will be accepted, and the presentation format for the work.

Notifications of acceptance will be sent by May 12, 2010. Authors retain the copyright to all submitted work and, by submitting, grant permission for inclusion in the proceedings.

Proposals for workshops and tutorials are welcome and must be submitted online.

Proposals for plenary or parallel sessions, panel discussions, roundtable sessions and other pre- or post-conference activities are welcome. Proposals should contain a brief description of the session theme, names of organizer(s) and a tentative list of papers to be included in the session; send to [programchair@systemdynamics.org](mailto:programchair@systemdynamics.org).

### **Submission Format**

Preliminary and final submissions must be received in .pdf format.

At the time of submission of each work, please fill out the online form (contact information for all author(s) with a 200-word abstract) and upload up to three updateable files. The first will be the body of the work with no author information for blind review; the second is the version for the web proceedings with a 200-word abstract and complete author information; and the third, any supporting material, including models, submitted as a single file or a .zip archive.

Materials must be submitted online via the Society website. Authors will be asked to complete a short questionnaire about the appropriate program thread placement and format for their presentation at the time of submission.



## Proceedings

A conference pack will include the program and printed Abstract Proceedings for all scheduled papers and events. The Conference Web Proceedings including final versions of papers will be posted on the Society website after the conference. Full works of presentations provided will be included in the web proceedings.

Conference Manager:

Roberta L. Spencer, Executive Director System Dynamics Society

### **Cybernetics: Art, Design, Mathematics A Meta-Disciplinary Conversation July 29th to August 5th 2010**

Please visit the conference website <http://www.asc-cybernetics.org/2010/> for further details.

### **3rd Complex Systems Modelling and Simulation Workshop Odense, Denmark, 19th August 2010 [http://www.cosmos-research.org/workshops/cosmos-workshop-2010/ workshop@cosmos-research.org](http://www.cosmos-research.org/workshops/cosmos-workshop-2010/workshop@cosmos-research.org)**

The 3rd workshop on Complex Systems Modelling and Simulation (CoSMoS) will take place as a satellite event of the AlifeXII: 12th International Conference on the Synthesis and Simulation of Living Systems (<http://www.alife12.org/>). Previous CoSMoS workshops have provided a forum for research examining all aspects of the modelling and simulation of complex systems. This year, we aim to complement the main themes of Alife XII by focusing the workshop on the engineering aspects of modelling and simulating (artificial) living systems.

Constructing models and simulations of complex systems is a challenging and interdisciplinary task. Elements might include choice of modelling tools and techniques, simulation infrastructures, concurrency, the process of moving from models to simulations, arguing validity of simulations, and the identification of reusable engineering techniques such as patterns. The CoSMoS workshop series is part of a four-year initiative, based at the Universities of York and Kent, UK, to develop a framework and infrastructure for the construction of generic complex systems simulations. Submitted papers will undergo a rigorous peer-review process and accepted papers will appear in the workshop proceedings published by Luniver Press. Proceedings of the previous CoSMoS workshop are available:

<http://www.cosmos-research.org/publications/#proceedings>

We are seeking papers on the engineering aspects of the modelling and simulation of complex systems, with a focus on complex living systems.

Areas of interest include, but are not limited to:

- \* Examples of engineering models and simulations of living systems
- \* Modelling tools and techniques
- \* Simulation infrastructures
- \* Arguing validity of simulations
- \* Concurrency and distribution techniques
- \* Identification of reusable engineering techniques
- \* Working across scientific disciplines



**Fourth International Conference on the Foundations of Information Science  
FIS 2010: Towards a New Science of Information  
Beijing  
20-23 August, 2010**

Conference website: [www.fis2010.cn](http://www.fis2010.cn) <<http://www.fis2010.cn/>>

(<http://fis2010.sisi2006.cn/fis2010/index.aspx>)

Continuing the series of FIS Conferences (Madrid 1994, Vienna 1996, Paris 2005) a new venue will be held in Beijing 2010. In our times, an increasing number of disciplines are dealing with information in very different ways: from information society and information technology to communication studies (and related subjects like codes, meaning, knowledge, and intelligence), as well as quantum information, bioinformation, knowledge economy, network science, computer science and Internet, to name but a few. At the same time, an increasing number of scientists in the East and the West have been engaged with the foundational problems underlying this development, to such an extent that the integration of disciplines revolving around information seems an idea whose time has come. A new science of information can be envisaged that explores the possibilities of establishing a common ground around the information concept, of constructing a new scientific perspective that connects the different information-related disciplines and provides a new framework for transdisciplinary research.

Paper Submission:

Papers should be no longer than 10 pages including all tables, figures, and references but excluding a cover page. Important dates

Deadline of Paper Submission: May 20, 2010

Acceptance Notification: June 20, 2010

Camera-Ready Paper: July 10, 2010

Paper Collection Published: August 20, 2010

**Perceptions of Systems: the Nature of Management, Communication and Creativity  
August 31st - 2nd September, 2010  
St Anne's College, Oxford University, UK**

Keynote speakers:

Professor Linda Macauley, Manchester Business School

Professor Michael C. Jackson, Hull Business School

John Seddon, Vanguard

Dr Joanne Tippett, University of Manchester

The theme of this year's meeting: Perceptions of systems: the nature of management, communication and creativity, has been chosen mindful of the ongoing issues facing those involved in systemic thinking and practice, and the ongoing debates about our own and shared perceptions of the systems we interact with and intervene in. Systemic research and practice strives to appreciate complex situations employing systemic models and methodologies as insightfully as possible, however there are issues that arise in the choice, implementation and (hopefully) evaluation of these models and methodologies. This meeting aims to explore these perceptual issues from the perspectives of management, creativity and communication; a trio of systems concepts that, could be argued, drive and underpin why we continue to use Systems approaches since their early formations over 70 years ago.

In previous UKSS meetings, we have explored various aspects of systemic thinking and practice, and the viability of the approach itself. This year, building on these reflections, contributions are invited which explore not only existing models and methodologies such as OR, System Dynamics, soft systems methodologies e.g. SSM, SAST, Interactive Planning, and interventions or explorations of Critical Systems Practice, but also those that expand the perceptions of systemic thinking in new areas of interdisciplinary research and practice, and in new arenas of intervention. Our invited speakers have been asked to highlight aspects of

management, communication and creativity in the modern world, from a Systems perspective, and this process will also feed through to the workshops planned for the second day of the meeting.

So yes, we invite you to tell us what you have been working on in this past year, but we also challenge you to expand your own perceptions of systems. Last year we explored "...the need for renewed vigour in exploration of systemic methods of inquiry to address the kinds of situation and challenge posed by large, complex, global and/or virtual organizations of business and government". This year we ask you to bring your renewed vigour in systemic thinking to the meeting in Oxford, share your work, and help to take the Systems perspective forward into new arenas of research and practice!

For further details, contact: [conference2010@ukss.org.uk](mailto:conference2010@ukss.org.uk)

**The 10th International Workshop on Meta-synthesis and Complex Systems (MCS 2010)  
August 31, 2010, Toronto, Canada**

**A Workshop at 2010 IEEE/WIC/ACM International Conference on  
Web Intelligence and Intelligent Agent Technology (WI-IAT 2010)**

**August 31 - September 3, 2010, Toronto, Canada**

**MCS 2010 URL: <http://meta-synthesis.iss.ac.cn/mcs2010/>**

**WI-IAT 2010 URL: <http://www.yorku.ca/wiiat10/>**

The serial International Workshop on Meta-Synthesis and Complex Systems is to facilitate the exchanges between scholars in the field of systems science and complex problem solving. After successful MCS2001(Beijing), MCS2002 (Shanghai, together with KSS2002), MCS2003 (Guangzhou, together with KSS2003), MCS2004 (Beijing), MCS2005 (Kobe, one workshop of IFSR2005), MCS2006 (Beijing, together with KSS2006) and MCS2007 (Beijing, one workshop of ICCS2007), MCS2008 (Singapore, a special track at IEEE SMC2008), MCS2009 (Chengdu, a workshop at MCDM2009), MCS serial workshops gain attention worldwide.

Formally proposed in 1990 by the famous Chinese system scientist Qian Xuesen (1911-2009) towards open complex giant systems, meta-synthesis approach emphasizes to make full use of cutting-edge information technologies and aims to achieve knowledge creation and wisdom emergence along complex problem solving process. Intensive research has been engaged into meta-synthesis approach to complex system modeling with an interdisciplinary view together with more practice in both reality and designed scenarios. In recent years, computational approaches have been greatly enhanced to explore knowledge-related technologies to mine more hidden patterns, tacit meanings from humans, which thus bring out many new foci on diverse topics, such as knowledge creation and computerized support, knowledge network and knowledge community structure, agent-based modeling about social problems, etc. As new wicked problems, e.g. emergency management and terrorism, bring more troubles to the current world, similar concepts like meta-synthesis have been of discussion and exploration, such as the advanced concept group in Sandia National Laboratories. It is then expected that the meta-synthesis system approach will be of more solid foundations and wide applications. MCS workshop aims to facilitate idea generation, knowledge sharing and scientific collaboration among those endeavors.

This year, MCS workshop will be continuously held to provide opportunities for people who are interested in systems sciences, complex problem solving and advanced modeling, meta-synthesis, artificial life, knowledge-oriented technology and integration, decision sciences and supporting technologies, etc. to facilitate interdisciplinary studies under the context of the 2010 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent System (WI-IAT2010) held in Toronto.

General contact email: [mcs@iss.ac.cn](mailto:mcs@iss.ac.cn)

Emails of acting chairs:

Xijin Tang [xjtang@amss.ac.cn](mailto:xjtang@amss.ac.cn) and Xiaoji Zhou [zh\\_xj@sina.com](mailto:zh_xj@sina.com)

**OPERATIONS RESEARCH "MASTERING COMPLEXITY"  
MUNICH 2010  
<http://www.or2010.de/>  
Methodology of Societal Complexity & Case studies  
Munich, Germany, Europe  
1-3 September, 2010**

<http://www.complexitycourse.org/doriendetombe.html> E-Mail: DeTombe@nosmo.nl

<http://www.complexitycourse.org/doriendetombe.html>

If you have any problems or questions concerning abstract submission, please contact [contact@or2010.de](mailto:contact@or2010.de)  
<<mailto:contact@or2010.de>>

Methodology of Handling Complex Societal Issues focuses on methods for policy making for complex societal problems. Methods and tools for analyzing, structuring, guiding and evaluating complex societal problems. Complex Societal Problems are problems that occur in many fields, like in the Agro-industry (Mad-Cow disease, BSE; Foot- and Mouth disease; Fowl Plague), in the transportation sector, in healthcare (Malaria, HIV/Aids, Sars, Flu), in Water affairs and economy (credit crisis). It focuses also on handling local safety problems like large city issues and natural disasters as flood and hurricanes and global safety problems like war, terrorism. Although many of these issues have different causes, they have so much in common that they can be approached in the same way. Handling complex Societal Complex societal problems as such are unstructured, dynamical and constantly changing and have a large impact on society on macro, meso and on micro level. Handling Complex Societal Problems needs a special multi disciplinary approach. The content knowledge comes from content experts. The process knowledge comes from facilitators. The attention of the research group is on the methods and tools facilitators need for supporting these kinds of problems. The facilitators use methods specially created for the field of societal problems combined with methods and insights derived from their original field like medicine, law, economics, societal sciences, methodology, mathematics, computer sciences, technology, engineering sciences, chaos theory and operational research. Often a combination of methods is needed. In this way the field uses all kind of methods from Social Sciences and Operational Research. The set of lectures focuses on methodology of handling real life complexity with an emphasis on global safety, sustainable development and healthcare.

**OR52, the OR Society's 52nd annual conference  
Royal Holloway University of London, Egham, Surrey, UK,  
7-9 September 2010**

Papers are invited on any aspect of operational research

Titles and abstracts may now be submitted via the OR52 pages on the Society's website, [www.theorsociety.com](http://www.theorsociety.com)

All papers will be assigned to an appropriate stream. More than 25 streams have been put in place – an up-to-date list, together with contact details for stream organisers, can be found on the website. Prospective authors are very welcome to discuss proposals for papers with stream organisers in advance of submission. Suggestions for additional streams would also be gratefully received: please contact the OR52 Programme Coordinator.

**Deadlines**

26 March 2010 As many papers as possible should be submitted by this date.

1 May 2010 Delegate registration and booking opens.

Registration at a reduced fee available until end of June.

30 June 2010 Final deadline for submission of titles and abstracts.

Reduced-rate registration ends.

16 July 2010 Final deadline for registration by presenter if the paper is to be scheduled.

**APMS 2010 International Conference**  
**Competitive and Sustainable Manufacturing, Products and Services**  
**11-13 October, 2010**  
**Cernobbio, Como, Italy**

The recent financial global crisis has accelerated the need for a sustainable economic growth where smarter and greener economy could create prosperity and new job from innovation and from using the natural resources better than before. In this global context, besides the role of the policy makers, companies cannot postpone anymore the implementation of strategies to deal with an increasing competition in a sustainable, green and environmental-conscious and social-oriented market: strict regulations, consumers demand for greener products, reduction of the carbon footprint, optimization of the usage of natural resources, more societal attention and many other trends are increasing the challenges to compete in a real global market. Companies are therefore called to become more efficient, increase their productivity, use less resources and non-renewable energy in an environment with high energy prices, carbon constraints and greater resource competition.

These challenges require a deep rethinking of the role of Manufacturing with the need for new approaches to Product, Service and Production Management: from a cost-cutting to a multi-disciplinary knowledge-based eco-factory model. With this goal in mind, APMS2010 calls for new, innovative and original scientific contributions which address practical and industrial-oriented solutions where the above context is addressed.

More details about the program, the registration, the venue and the accommodation are available at the conference web site [www.apms-conference.org](http://www.apms-conference.org) <<http://www.apms-conference.org>> .

For any information, please contact [info@apms-conference.org](mailto:info@apms-conference.org) <<mailto:info@apms-conference.org>>

For any comments, requests and proposals, please contact Prof. Marco Taisch, Conference Co-chair, [marco.taisch@polimi.it](mailto:marco.taisch@polimi.it) <<mailto:marco.taisch@polimi.it>> , Tel: +39 02 2399 4815, Fax: +39 02 2399.3978

**Cwarel Isaf Conference on Management Cybernetics 2010**  
**Reunion of Leading Management Cyberneticians**  
**21-22 October, 2010**  
**St.Gallen, Switzerland**

Together we have started working on a roadmap for this Great Transformation in 2009. Out of this roadmap have come some promising projects.

We would like to share with you the latest and one of the most exiting ones: On December 2nd to 5th, Malik Management conducted a Syntegration for the future development of the city of St. Veit, Carinthia, Austria. The Syntegration was combined with a VSM diagnosis, a Sensitivity Model for each of the twelve subtopics, our Malik EKS Strategy approach, a kick-off to a local Ecopolicyade to educate the city's young and the launch of a Malik Academy for Entrepreneurs – all of which were done simultaneously.

Without exception, all the city's influential people participated. The Syntegration resulted in 120 measures for the sustainable, successful and, in energy matters, self-sustaining development of the city. It also resulted in the conviction of all the participants to have found the key to the future. Implementation started immediately and is on-going. We are confident to finish the entire project by the middle of next year at the latest.

In the light of tremendous media attention and interest from other cities, communities and also the state of Carinthia, we hope to have created the "Big Bang" of public sector development in the 21st century for a functioning society.

# SECTION THREE

## ISSS BUSINESS

### NOTICE OF UPCOMING ISSS MEETINGS

The annual membership, council and board meetings will be held during the annual conference at Wilfrid Laurier University, Waterloo, ON Canada, July 18-23, 2010.

### Minutes of 2009 Board of Directors Meeting Online February 1- July 1, 2009

Jennifer Wilby called the meeting to order on February 1.

#### 1. Proposed Special Integration Groups (SIGs) for Deletion.

Jennifer Wilby reported that several SIGs (Duality Theory, Futurism and Systems Change, Human Systems Inquiry, Systems Psychology and Psychiatry, and Women and Children) have not organised in past two years conferences, do not have current active SIG chairs, and have not filed reports of any activity for publication in the General Systems Bulletin for at least two years. Tim Allen commented that some SIGs are fostered by particular members but aren't sustainable once those members become inactive in ISSS. David Ing expressed his disappointment that the Human Systems Inquiry SIG was proposed for deletion, and wondered if some of its members had migrated to the new Organizational Transformation and Social Change SIG, in which case Human Systems Inquiry may be redundant. He also wondered if the Board had invoked a probationary period for some SIGs. Gary Metcalf expressed his view that having a bottom-up structure for creating SIGs has value, so that the direction and interest of the membership is reflected in the structure of the society, but noted that this creates a confusing array of topical areas that make little sense to people from the outside (new members, or those looking at papers from the conferences.) As well, since the SIG chairs carry a role as voting members of the Council, it creates potential issues for the governance of the society. He offered to contact the current chair about his interest in continued participation in the Human Systems Inquiry SIG. G.A. Swanson agreed that such informal contact would be desirable.

#### 2. Proposed Name Changes for Active SIGs.

Jennifer Wilby forwarded proposal that the name of the Applied Systems and Development SIG be renamed to Systemic Approaches to Conflicts and Crises, to better match how the SIG has developed and thus attract the right papers to future conferences. She also proposed that the Medical Health Systems SIG be changed to Health and Systems Thinking, and the Systems Psychology and Psychiatry be renamed to Systems and Mental Health, since both had new SIG chairs to take them forward.

#### 3. Proposed New SIGs for Ratification

Jennifer Wilby reported that Janet McIntyre submitted the following proposal for ratification as a new ISSS SIG.

Balancing Individualism & Collectivism: User-centric Policy Design To Inform Metamodelling

PROPOSER: Janet McIntyre

The Balancing individualism and Collectivism SIG would explore ways to use user centric design processes to address complex, wicked problems in such a way that we enhance the process of democratic decision making and governance based on matching responses to areas of concern to ensure the common good and to test out ideas with those who are to be affected by the decisions and with future generations in mind.

Wicked problems: the social inclusion challenge for democracy and governance. Wicked problems comprise diverse, multiple variables and have a value basis (see Rittel and Webber, 1973 Flood and Carson, 1998, McIntyre-Mills 2006, 2007, 2008 forthcoming). Addressing complex wicked problems of poverty, climate change, epidemics, security and pollution is a challenge for today's world (see Nussbaum 2006, Singer, 2002 Gore, 2007, Stern, 2007), because the problems straddle conceptual and spatial boundaries, but they also perceived very differently by people with diverse values. The global commons is under threat and we



need to find a way to address the challenges in such a way that we can ensure a sustainable future whilst balancing collective interests, rights and responsibilities with individual concerns, rights and responsibilities. (Held et al 1999, 2005, McIntyre-Mills et al 2006, Christakis and Bausch, 2006).

Wellbeing cannot be achieved through compartmentalized thinking and practice (Fougere, 2007). The challenge is a) to balance both centralized control to preserve the global commons and b) to involve people in policy making so that they feel engaged and committed to the policy. Seeing the connections across sustainable futures and wellbeing was understood by Gro Brundtland (1987) who made the conceptual policy connection across health, sustainable development and peace. This is vital. Some leaders can think only of social or environmental justice - not both. Al Gore has made a vital contribution to understanding the links across carbon emissions and climate change in his documentary "An Inconvenient Truth" and his recent book "Assault on Reason". He made a case for the importance of civil society and participation to keep the market and the state honest. He stressed that participation in active debates helps to mobilise change and to sustain democracy.

Furthermore, the move to more integrated approaches to governance has implications for federal-state-local relations in Australia and international relations. The decentralisation of policy making and accountability checks by the people will however need to be married with centralised controls to ensure that the common good is addressed. The challenge for governance is to understand connections across social, cultural, political, economic and environmental challenges. This means being able to hold in mind more than "one big idea at a time" (Jones, 1990). A number of challenges face democracy and governance, these include:

Increasingly diverse democracies in which citizens can be disengaged and passive, even if they choose to vote or are compelled by law to vote. The scale of the democracy and the distance that the people feel between themselves and the elected representatives can lead to a sense of being alienated from the institutions of government and the process of governance.

Finding ways to enhance effective participation in deliberating policy options with local communities to establish their perceptions of need and their perceptions of what works, why and how. This is needed to inform policy makers and enable a better match of responses to needs. The challenge is that participation leads to many diverse ideas that need to be mapped and assessed in terms of "if-then" scenarios, before determining policy and governance decisions.

Jennifer Wilby also reported that Vince Lopes, with a working committee of several ISSS members (Adrian Vogl, Ken Bausch, Ken Mix, Caroline von Schilling, Sally Goerner, Allenna Leonard, Janet McIntyre, Ockie Bosch, Stephan Brown, Martin Bunch, Jon L) submitted the following proposal for ratification as a new ISSS SIG.

### **Socio-Ecological Systems**

PROPOSER: Vince Lopes, with Working Committee: Vince Lopes, Adrian Vogl, Ken Bausch, Ken Mix, Caroline von Schilling, Sally Goerner, Allenna Leonard, Janet McIntyre, Ockie Bosch, Stephan Brown, Martin Bunch, Jon Li

Mission: The Social-Ecological Systems (SES) SIG would provide an intellectual environment for transdisciplinary investigation of how human societies deal with change in linked social-ecological systems, and build capacity to adapt to change. The SES SIG will bring together scholars and practitioners from a diversity of disciplines to develop research methodologies and improve understanding of how linked social-ecological systems operate.

Objectives: Our goal is to understand change in coupled social-ecological systems, and generate knowledge that can serve as a resource for human actors to develop their communities and the natural conditions of their lives, including:

- Developing management practices and social mechanisms for building resilience and sustainability
- Developing action plans based upon key leverage points that enable communities to efficiently identify and pursue their goals
- Developing mechanisms for shifting from conventional to adaptive co-management, and
- Supporting the design and emergence of flexible organizations and institutions

Justification: The search for solutions to environmental problems must arise from the realization that eco-systems and their components are not isolated elements, but are integrated parts of complex, linked social-ecological systems. These systems exhibit a high degree of uncertainty as a result of process interactions occurring at different spatial and temporal scales and social orders. Managing for sustainability, therefore, means maintaining diversity and variability, and allowing for some slack, flexibility, and redundancy rather than pushing the system to its limits or trying to optimize some parts of the system. For this reason, it is important to understand when and where it is both technically and culturally feasible to intervene in management. Focus on coupled social-ecological system requires coordinating the technical management of bio-physical systems with the institutionally-mediated deliberation of cultural values governing the relationships and interactions of stakeholders. It involves confronting ecological, economic, institutional, and political complexities, with each of these dimensions entailing a different type of uncertainty. Drawing on new insights from systems thinking, complexity theory and participatory methods, the SES SIG will seek to merge different forms of knowledge and ways of knowing into an integrated framework for improved understanding of social-ecological dynamics and sustainability. This integrative approach transcends disciplinary science and requires collaboration over the boundaries of the natural sciences, social sciences, and the humanities.

Tim Allen commented that proposed SIGs seem to have conceptual overlap. He suggested asking Janet McIntyre and Vince Lopes if they are interested in fusing, but he didn't object to each group having their own distinct identities if that is important to them. He also agreed with David Ing's recommendation that the name for the proposed SIG #1 be shortened along with a clarification of the focus of that SIG relative to other existing SIGs. Allenna Leonard suggested that proposed SIGs be subject to a one-year probationary period. She also commented that the overlap between some of ISSS's SIGs is both a strength and a weakness of the way ISSS operates. Jennifer Wilby indicated that ISSS should use SIGs as integration groups, and should be using their topics of interest as a basis to integrate with other SIGs, and so there will be crossover and blurred boundaries. She confirmed that the Board has instituted a probationary period for new SIGs in the past. She reported that Janet McIntyre had provided a more succinct title to the new SIG she proposed, and that the revised proposed title was "User-centric Policy Design and Metamodelling."

#### **Request by Sue Gabriele for ISSS Support for RoundTable Research in Los Angeles Schools.**

Jennifer Wilby reported that ISSS member Sue Gabriele would like to have the support of ISSS for the following Roundtable project (Jennifer noted that ISSS is a body whose purpose according to bylaws is as Sue's project requires):

"I [Sue Gabriele] am getting ready to offer to do RoundTable research in schools. On the LOS ANGELES UNIFIED SCHOOL DISTRICT (LAUSD) website, it lists ... 'Institutional Support - Professional: Research is sponsored by universities, governmental agencies, or by similar nonprofit organizations engaged in scholarly research [as a required proposal element].' I am wondering whether I could do it under the umbrella of ISSS. Could we call ISSS a nonprofit organization engaged in scholarly research? If so, who would act as supervisor?"

Gary Metcalf and Ockie Bosch both raised the question of whether sponsorship of research implies any kind of liability or responsibility for oversight; if not, they expressed strong support for ISSS encouraging more research. Debora Hammond wondered if David Ing as VP of Research and Communication or Jed Jones as VP of Communication and Systems Education might be logical choices as supervisors for such research. Allenna Leonard recommended that there be some sort of graduated supervisory ladder. She also indicated that, in Sue Gabriele's research case, ISSS endorsement would indicate that the Society thinks the research is a good idea and we agree with it, but that ISSS is not making a financial contribution, nor is the Society likely to intervene in the research design or have deadlines for publication. Allenna said, that there may be future opportunities for ISSS to take an active role in experimental or historical research, which might call for additional guidelines. During the discussion of this agenda item, Sue Gabriele contacted the Society, indicating that she no longer required ISSS's sponsorship to pursue her research project. Jennifer Wilby indicated that the Board will pursue development of a policy for future support of members' research endeavours.

#### **5. Proposal to Consolidate ISSS Finances from Four Accounts to Two**

Jennifer Wilby requested that the Board consolidate ISSS finances from four accounts to two, moving all accounts to the UK (at present, two accounts are in Salinas, California. Discussion with Gary Metcalf, Bela Banathy, and G.A. Swanson resulted in the recommendation that the Trustee Fund remain in the U.S., since

ISSS is still officially incorporated there. Gary Metcalf volunteered to move the incorporation to Kentucky and to take responsibility for overseeing the U.S. base.

## **6. Proposed Location for ISSS 2010 Conference**

Jennifer Wilby reported that Allenna Leonard and David Ing have visited locations in the Toronto area for a location for the ISSS 2010 conference. After discussions and a visit from Ing, Leonard and Wilby, the best choice appears to be Wilfred Laurier University in Waterloo, July 18-23, 2010. This University is located in an area where several new interdisciplinary research centres have been founded, so there will be excellent local support, resources for speakers, etc. The facilities are good. Rooms are already equipped with audio visual, which will reduce costs, and residences are the building next door arranged in 1 bed apartments. There are also local hotels for other accommodation options. Gary Metcalf asked about the general perception about Waterloo as a draw for a location. Tim Allen expressed his view that Waterloo is a pleasant town, with a history of James Kay being there, David Waltner Toews (a Madison Meeting speaker) in Guelph close by, and a strong systems design engineering program. He noted that Waterloo is an easy 1-hour drive (by car or bus) from Toronto and 3 hours from Detroit. He pointed out that it would be possible to highlight trips to the Great Lakes and the Waterloo Nature Refuge. Allenna Leonard explained that Toronto, cottage country, Niagara-on-the-Lake's Shaw Festival and Niagara Falls are close enough so that people may be tempted to stay and do some sightseeing, catch some plays or relax. She explained that we are hoping for some local draw - both speakers and attendees.

## **7. New Business**

Jennifer Wilby requested that Board Members send her any agenda items for the next Board meeting on Monday July 13th at 7p.m. in Brisbane, Australia.

### **Motions:**

Jennifer Wilby proposed that the Duality Theory, Futurism and Systems Change, Human Systems Inquiry, Systems Psychology and Psychiatry, and Women and Children SIGs be deleted because they had not organised in past two years conferences, do not have current active Chair of SIG, and have not filed reports of any activity for publication in GSB for at least two years. David Ing seconded. Motion passed.

Amended motion: David Ing proposed that (former Chair) Arne Collen be contacted about the Human Systems Inquiry SIG and that this SIG be put on one-year notice. Pamela Henning seconded. Motion passed.

Jennifer Wilby proposed that the name of the Medical Health Systems SIG be changed to Health and Systems Thinking (Thomas Wong, Chair). David Ing seconded.

Amended motion: Jennifer Wilby proposed that the name of the Systems Psychology and Psychiatry SIG be changed to Systems and Mental Health (Chairs Tamar Zohar Harel and Pamela Buckle), and that the name of the Applied Systems and Development SIG be renamed to Systemic Approaches to Conflicts and Crises. Pamela Henning seconded. Motion passed.

Jennifer Wilby proposed ratification of proposed new SIGs named "Balancing Individualism and Collectivism: User Centric Policy Design To Inform Metamodelling" (proposed by Janet McIntyre) and "Socio-Ecological Systems" (proposed by Vince Lopes). David Ing seconded.

Amended motion: Jennifer Wilby advised that the SIG proposed by Janet McIntyre be named "Balancing Individualism and Collectivism." Pamela Henning seconded. Motion passed.

David Ing moved that the ISSS, as a not-of-profit organization, serve as sponsor for Sue Gabriele in a proposal to conduct Roundtable research in the Los Angeles Unified School District. Gary Metcalf seconded. Jennifer Wilby closed this agenda item due to Sue's having received the requested support from Saybrook University.

Jennifer Wilby moved for the Board to pass a resolution to consolidate ISSS finances from the existing two accounts in Salinas, California, managed by Bela Banathy, to the UK Dollar account, and within that account into separate certificates of deposit in the amounts of \$18,406.83 for the Trustees Account, and the remainder \$20,768.31 for the General Account Surplus; further, that the current VP Funds, Todd Bowers, be added to the signature accounts so that two signatures are now required for any disbursements. Allenna Leonard seconded.

Amended motion: Debora Hammond revised the motion to consolidate the finances into two accounts, the Trustee Fund in the U.S. (including the noted \$18,406.83), and one in the UK in the amount of \$20,768.31

for the General Account Surplus; further that the I propose that the VP of Funds be added as a required signature for any disbursement of funds from the UK account. Jennifer Wilby seconded. Motion passed.

The Board therefore actioned:

I. Jennifer Wilby to write letter of authorisation for Gary Metcalf to open certificate of deposit account and a checking account for the management of money in and out of that account.

II. Bela Banathy to transfer to the new checking account the amount of \$39,175.14 and to close the existing checking account in Salinas (or Monterey?), California.

III. Gary Metcalf to move \$18406.83 to the certificate of deposit, keep \$1500 in the Kentucky checking account, and transfer the remaining office funds to the US dollar account held in the UK for deposit into the fund with the remainder of the US funds held in the UK. The letter of authorisation will be sent to Gary on agreement of the letter's required content by the Kentucky bank.

Jennifer Wilby proposed that Wilfred Laurier University be adopted as the choice of venue for ISSS 2010. Debora Hammond seconded. Motion passed.

### **Minutes of 2009 ISSS Board of Directors Meeting University of Queensland, July 13, 2009**

Gary Metcalf called the meeting to order at 6:20pm.

Present: Jennifer Wilby, Ockie Bosch, Tim Allen, David Ing, Debora Hammond, Gary Metcalf, Allenna Leonard

Absent: Pamela Buckle, Todd Bowers, Jed Jones

#### 1. Budget

Budget presented to board by Jennifer Wilby.

Motion to approve budget from Tim Allen, seconded by Debora Hammond.

Discussion of budget followed regarding areas financed, where money is allocated, and levels of contribution from each class of membership. Tim Allen led discussion on finding out why members stay with the society and how that could inform increasing membership and services to members, and suggested that giving access to experts in various fields and facilitating bridges to other groups such as NECSI and INCOSE that David Ing is working on. Ockie Bosch informed that Kambiz Maani will be doing a systems analysis project on increasing membership in ISSS.

Vote to approve: all in favour.

#### 2. 2008 Madison conference

Information item that Madison had been a successful and interactive conference, with thanks to President Gary Metcalf and University of Madison host Timothy Allen.

#### 3. 2009 Brisbane conference

Information item thanking Ockie Bosch for the local organisation of the Brisbane conference. Ockie gave some feedback on the organising process, including the constraints of working with a very limited conference budget and that sponsorship for conferences was an important need to help with this limitation, perhaps from industry.

#### 4. 2010 Proposal for Waterloo Conference

Motion to approve Wilfrid Laurier University, Waterloo, Ontario, Canada as the location of the 2010 ISSS conference made by Gary Metcalf and seconded by Debora Hammond.

Allenna Leonard presented some information regarding a proposed theme of "Governance for a Resilient Planet". The University facilities are contained within one city block and accommodation is attached to the conference venue. Room and A/V charges are very reasonable and available as a set price. Possible speakers are David Waltner Toews, Thomas Homer Dixon, and several other possible speakers were discussed

for invitation. Also suggested was the possibility of having a corporate day, also a day for students. Any suggestions for program development were to be sent to Allenna Leonard for input into the planning process.

Motion to approve Waterloo as next venue was voted on passed unanimously.

#### 5. Ratification of Elections of Officers 2009.

Results of elections were: Jennifer Wilby elected to President Elect, and Ockie Bosch elected as VP for Communications and Systems Education.

Motion to ratify election results by Jennifer Wilby and seconded by Ockie Bosch. Motion approved unanimously.

6. Resulting from this election, the position of the VP Administration becomes open. Motion made to co-opt Doreen Gibbs to the post through the end of the current term of office in July 2011. Motion made by Allenna Leonard and seconded by Debora Hammond.

Motion approved unanimously.

7. Motion made by Allenna Leonard to propose Eric Ing for election by Council to the post of VP for Membership and Conferences 2009/2010, working on the Waterloo conference. Seconded by Tim Allen. Motion approved unanimously.

#### 8. Motion to remove non-organizing SIGs

Motion proposed by Tim Allen to disband Systems Philosophy and Ethics, Systems Specific Technology, and MMSE. Gary Metcalf seconded this motion. The motion was approved unanimously.

#### 9. Tabled

10. Web issues – this was also tabled, no items brought for discussion.

#### Other Business:

11. David Ing is working on a new initiative to introduce systems approaches to the INCOSE meetings from the perspective of service systems science. There will be a one year series of meetings in the UK, Japan and Austria to develop this initiative.

#### 12. Systems Education Initiative

During this conference there has been a workshop creating a committee for international systems education development of courses and materials. This will be led by Ockie Bosch and Kambiz Maani and will be discussed further in Austria at the Pernegg conversations, and also in a 2-day workshop next year preceding the Waterloo conference.

13. New list to be created for an SD project on ISSS by Kambiz Maani. More information will be forthcoming in the near future.

14. Funding proposals. An information item was given by Gary Metcalf regarding grants being worked on. First is in the US for an NSF bid, and the second is smaller with a non-profit foundation working on systems connections with John Bowlby. Gary and David are working on this latter project and will be visiting the Tavistock Institute to conduct interviews for the project later in this year.

#### Adjournment

With no other business, the meeting was adjourned at 8:40 p.m.



**Minutes of ISSS Council Meeting University of Queensland, Brisbane  
July 15, 2009**

Present: Jennifer Wilby, Ockie Bosch, Tim Allen, David Ing, Debora Hammond, Gary Metcalf, Allenna Leonard, Jim Kijima, Len Troncale, Gerhard Chroust, Dennis Finlayson, Jae Yu, Eric Ing, John Kineman, Jim Simms, Alexander Laszlo, Kathia Castro Laszlo, Kambiz Maani, Matjaz Mulej, Janet McIntyre, Shankar Sankaran, Youn Soo Sim, Carl Swanson, Thomas Wong, Tamar Harel Zohar

Called to order: 6:00 pm

1. Budget

Budget presented to Council by Jennifer Wilby.

Motion to ratify budget from Tim Allen, seconded by Debora Hammond.

Discussion of budget followed regarding areas financed, where money is allocated, and levels of contribution from each class of membership.

Vote to approve: all in favour.

2. 2010 Proposal for Waterloo Conference

Motion to ratify Board approval of Wilfrid Laurier University, Waterloo, Ontario, Canada as the location of the 2010 ISSS conference, made by Gary Metcalf and seconded by Debora Hammond.

Allenna Leonard presented some information regarding a proposed theme of "Governance for a Resilient Planet", and the University facilities are contained within one city block and accommodation is attached to the conference venue. Room and A/V charges are very reasonable and available as a set price. Possible speakers are David Waltner Toews and Thomas Homer Dixon. Any suggestions for program development were to be sent to Allenna Leonard for input into the planning process.

Motion to ratify Waterloo as next venue was voted on and passed unanimously.

3. Ratification of Elections of Officers 2009

Motion to ratify election results by Jennifer Wilby and seconded by Ockie Bosch. Motion approved unanimously. Jennifer Wilby elected to President Elect, and Ockie Bosch elected as VP for Communications and Systems Education.

4. Resulting from this election, the position of the VP Administration becomes open. Motion made to ratify vote by Board to co-opt Doreen Gibbs to the post through the end of the current term of office in July 2011. Motion made by Allenna Leonard and seconded by Debora Hammond.

Motion approved unanimously.

7. Motion made by Allenna Leonard to propose Eric Ing for election by Council to the post of VP for Membership and Conferences 2009/2010, working on the Waterloo conference. Seconded by Tim Allen. Motion approved by Council unanimously.

8. Motion to ratify the removal of non-organizing SIGs

Motion proposed by Tim Allen to disband Human Systems Inquiry, Systems Modeling and Simulation, Systems Philosophy and Ethics, Systems Specific Technology, and MMSE. Gary Metcalf seconded this motion .

After discussion, the HSI SIG was assigned Dr Shankar Sankaran as the new chair to re-organize the SIG before the next conference. The motion was then amended to disband only the SIGs of Systems Modeling and Simulation, Systems Philosophy and Ethics, Systems Specific Technology, and MMSE.

The amended motion was approved unanimously.

Adjournment

With no other business, the meeting was adjourned at 7:00 p.m.

**Minutes of ISSS Membership Meeting  
University of Queensland, Brisbane  
July 17 2009**

Called to order: 12:30 p.m.

Jennifer Wilby presented the budget for 2009/2010 and explained income and expenditure from the previous year in a presentation of accounts for the previous conference and the ISSS general accounts. Membership statistics were also presented and questions taken regarding the budget, finances and memberships.

Items approved and ratified by Board and Council were reported to the membership meeting.

These included:

1. Budget

2. Approval of location of Waterloo Conference for 2010, and that the theme will be "Governance for a Resilient Planet". Any suggestions for program development were to be sent to Allenna Leonard for input into the planning process.

3. Reporting of results of election of officers 2009

Results of elections were: Jennifer Wilby elected to President Elect, and Ockie Bosch elected as VP for Communications and Systems Education.

4. Reporting the approvals to co-opt Doreen Gibbs to the post of VP Administration through the end of the current term of office in July 2011.

7. Election by Council of Eric Ing to the post of VP for Membership and Conferences 2009/2010, working on the Waterloo conference.

8. The disbanding of Systems Modeling and Simulation, Systems Philosophy and Ethics, Systems Specific Technology, and MMSE for no activity over (at least) the past two years.

9. The approval of two new SIGs, Balancing Individualism and Collectivism and Socio-ecological Systems. Names for other SIGs had been adjusted to better fit their current interests.

Other Business

The meeting then discussed possibilities for interaction at the next meeting with more time for SIGs to get together and explore their own content and that of others and how they may overlap. Members gave contributions of ideas for the design of the next conference, and these were discussed, and how the program could be designed to incorporate all these ideas. Members also made suggestions for raising additional revenue and increasing attendance, and these ideas will all be brought into the conference planning process for Waterloo.

Adjournment

With no other business, the meeting was adjourned at 1:00 p.m.

**CASH ACCOUNTS ISSS**  
**Financial Year 2009 (January - December)**  
**(US Dollars)**

Beginning January 1 2009			\$ 62,718.65
Income			
Memberships	11,678.68		
Conf. Memberships	12,030.00		
SIG contributions	455.00		
Additional Journals	0.00		
Grant / Bowlby	15,000.00		
From Madison UW account	3,909.62	43,073.30	\$ 105,791.95
Expenses			
Bank charges	1,008.58		
Journals	11,555.07		
Bulletin	991.39		
Phone calls	64.91		
Postage	1,323.97		
Office costs	1,083.14		
Office stipend	5,029.00		
Disbursement to Bowlby	14,250.00		
Internet/Computing/Web Costs	2,600.22		
Tennessee Registration	20.00		
Conference Loss	8,880.38		
Currency Exchange Costs/loss	726.77	47,533.43	
Ending December 31 2009			\$ 58,258.52
US Checking		32,990.11	
Worldpay Holding		180.00	
UK Sterling		4,214.98	
UK Dollar		20,873.43	
Ending December 31 2009			\$ 58,258.52

**ISSS2009**  
**UNIVERSITY OF QUEENSLAND, BRISBANE CONFERENCE**  
**CONFERENCE FINANCIAL REPORT**  
**Within financial year 2009 (Jan-Dec)**

DEPOSITS / REFUNDS	
Brisbane Registration Fees	\$ 53,705.00
Office registration fees	1,296.00
TOTAL DEPOSIT/REFUNDS:	\$ 55,001.00
DISBURSEMENTS	
ISSS Memberships	12,030.00
SIG Contributions	455.00
CDROM Proceedings	2,545.50
University of Queensland Disbursements (Catering, Speaker travel, Printing, Office Supplies)	30,488.91
Speaker Costs paid by Office	4,510.44
M/C, Visa Service Charge	2,745.43
Vickers award and plaque	630.00
Miscellaneous Supplies & Services	300.00
Disbursements from Office	10,176.10
TOTAL DISBURSEMENTS:	\$ 63,881.38
NET PROFIT/LOSS:	\$ -8,880.38

**SIG ANNUAL REPORTS:** List of Active SIGs and (Report Received)

Agent- based Social Systems (NO)  
Aging Systems (NO)  
Balancing Individualism and Collectivism (NO)  
Critical Systems Theory and Practice (NO)  
Designing Educational Systems (NO)  
Evolutionary Development (NO)  
Health and Systems Thinking (NO)  
Hierarchy Theory (NO)  
Human Systems Inquiry (NO)  
Information Systems Design and Information Technology (NO)  
ISSS Roundtable (YES)  
Living Systems Analysis (NO)  
Organizational Transformation and Social Change (NO)  
Research Towards a General Theory of Systems (NO)  
Socio-ecological Systems (YES)  
Spirituality and Systems (NO)  
Student SIG (NO)  
Systemic Approaches to Conflict and Crises (NO)  
Systems Applications in Business Industry (NO)  
Systems Biology and Evolution (NO)  
Systems and Mental Health (NO)  
Systems Pathology (NO)  
What is Life and Living (NO)

## Report from the Socio-Ecological Systems SIG by Jon Li

The first panel series of the Socio-Ecological SIG was an amazing adventure and an unqualified success.

As one of the four Ing brothers said at the banquet, we talk about applying our ideas to reality and not just theory.

The first Monday SES session addressed the very heart of Vince Lopes' and Adrian Vogl's work: Watershed management.

- Helen Ross: A Systems Framework for Integrated Water Resource Management
- Eriyatno: Model of Regional Policy Strategy in Sustainability Irrigation Management
- Bret Painter: Sustainable Water Allocation for Families, Fish and Farming: A Wicked Problem or a Wicked Solution.

While we missed Vince's grounding in integrated systems philosophy, everything else was there, and as a way of introducing the panel, I put Vince's and Adrian's email addresses on the board, and encouraged each of the panelists to be sure to email them. The only problem I had was the order: Eriyatno, the comprehensive policy analyst from Indonesia should have been first and set the context, then Helen second, and then I think we would have had a better understanding of Painter's data. Painter isn't even a hydrologist/ecologist, he is a management scientist! He did a great job of presenting oodles of data graphically in a comprehensive way that laid out the problems of water for the Christchurch watershed region. As a footnote, the final comment was by Eriyatno's colleague, who asked me how come the 20 most sustainable cities identified in the morning presentations did not include a single city from the U.S. I responded that that was a rhetorical question! As he walked out, he laughed and said he studied at the University of Southern California; I responded that I am Blue and Gold (rival University of California).

The second Monday session was as close to applied science as you can get.

- Tom Adams: Systems Thinking in the Forestry Value Chain - a case study of the New Zealand Emissions Trading Scheme
- Adam Ing: Biobased Lubricants: A Viability Study
- Gunjan Garg: Phytoremediation Potential of radish (*Raphanus Sativus L.*), mustard (*Brassica Juncea L.*) and wheat (*Triticum Aestivum L.*) for Copper Contaminated Soil
- Murray Lane: Carrying Capacity

Adams addressed emissions trading, Adam Ing examined the potential to move away from petrochemicals to biobased products for mechanical lubricants, Garg looked at the relative efficacy of wheat, mustard and radish plants for phytoremediation: to explore the potential for different plants to absorb unwanted Copper from the soil so that healthy plants can be grown, and Lane addressing a whole range of questions about the carrying capacity of a particular biosphere. (If someone could send this to Murray Lane, I would appreciate it.) Lane's issues tended to dominate the discussion around population carrying capacity, with Adams challenging the group with a lot of, oh come on, look at reality kinds of rebuttals to most anything raised.

The first Thursday session looked at many sustainability challenges of production agriculture, a particular interest of mine, since I went to the Ag school of UC.

- Robert Faggian: Systemic Regional Development - A Systems Thinking Approach
- Jennifer Bellamy: Regional Governance in Rural Australia: An Emergent Phenomenon of the Quest for Liveability and Sustainability
- ME Wedderburn: Rural Futures': A Social-Ecological Systems Perspective on New Zealand Farming Futures
- TT Kingi: Iwi Futures: Integrating Traditional Knowledge Systems, Cultural Values and Agricultural Development Pathways

Faggian opened by raising concerns about farmer preconceptions that if a particular strategy or application is recommended, then even more is better, and questioning how a systems approach could be used to educate farmers to become more experimental, and even more open minded about effective and efficient results as well as profitability. Bellamy laid out a whole range of regional/local governance and communica-



tion issues for the vast largely unpopulated region of Queensland on the other side of the mountains from Brisbane. Wedderburn focused on the challenges of production agriculture in New Zealand, how the World is reliant on NZ for several key commodities, and that there is some consolidation of farmland, and some reduction in yield of major crops. Tanira Kingi presented a comprehensive picture of the traditional Maori analysis of Father Sky and Mother Earth, and how it is playing out in the modern management of rural land for the native peoples of NZ.

Nam Nguyen: The Importance of Systems Thinking and Practice for Creating Biosphere Reserves as Learning Laboratories for Sustainable Development

Jon Li: Surviving the Economy

The second Thursday session featured Nam Nguyen continuing the presentation on the Cat Ba biosphere reserve in Vietnam and its potential as a learning laboratory for sustainable development, building on the morning plenary presentation. And Li presented a followup of last year's paper on transitioning to a sustainable Ecotopian governmental/economic/social system, introduced the idea of overdeveloped countries, and ended by saying the first world has more to learn than we have to teach. This engendered a discussion about how to bring the ideas of sustainability into the main stream media. Li began by recognizing Australia's native peoples and his teachers John Van Gigch and Stafford Beer, and ended by acknowledging the emergence of women leaders in ISSS, Presidents Debora Hammond, Allenna Leonard, and Jennifer Wilby as a segue to Past President Margaret Mead's most famous quote: "A small group of thoughtful people could change the world. Indeed, it's the only thing that ever has."

### **Report from ISSS Roundtable SIG**

When: Saturday, December 5 from 2-4 pm, the ISSS Roundtable met so that we can demonstrate and get feedback from you on our 2010 project, a monthly "Community RoundTable" in the Los Angeles South Bay. See also: <http://www.gemslearning.com/rtable.html>

<http://iss.org/world/SIG-call-for-papers-brisbane-2009> ISSS RoundTable

MONTHLY/QUARTERLY COMMUNITY ROUNDTABLE: A 90-Minute Community RoundTable will meet monthly/quarterly in 2010 at a local site in the South Bay (e.g., restaurant, library, etc.). Our current format is two-part: [1] 30 minutes: speaker/special topic & discussion; [2] Community RoundTable: 10 minutes: information/inspirational texts; 50 minutes: participant comments--time distributed equally among all present. Topics will include best theory/practices, general systems theory, systemic change/renewal and other subjects of interest. We are open to anyone interested in: personal, professional or community betterment; or ongoing accelerated learning/ attitude adjustment in satisfying community. We aim to experience a half dozen sessions (perhaps 'til July), then revisit our purposes to see if and how we would like to continue with it.

# SECTION FOUR

## MEMBERS' BULLETIN BOARD

### **Significant Investment in New Systems Courses and Programs by The Open University (UK) Ray Ison**

After a lot of hard work in 2009 it is pleasing to announce the launch in 2010 of a suite of new Systems courses and programs at The Open University (UK).

The overall program will comprise three possible awards. The first is a Postgraduate Certificate in Systems Thinking in Practice (C72) of 60 OU credit points. A new course due for first presentation on May 2010, 'Thinking strategically: systems tools for managing change' (TU811) is a compulsory 30 point course for this award together with another 30 point OU option (see <http://www3.open.ac.uk/study/postgraduate/qualification/c72.htm#courses>) or where credit transfer has been arranged, a partner option.

The second award is a Postgraduate Diploma in Systems Thinking in Practice (E28) of 120 OU points. To be awarded the PG Diploma the PG certificate plus another 60 points of study must be completed. 'Managing systemic change: inquiry, action and interaction' (TU812) is a 30 point compulsory course with TU811 (above).

The third award is the MSc in Systems Thinking in Practice which is made up of the PG Diploma plus a further 60 points of study.

As a result of the investment made by The Open University in the new Systems awards four new books have been produced and co-published with Springer. The first, now published, *Systems Thinkers*, is devoted to the individuals who are generally recognised as systems thinkers. This work presents a biographical history of the field of systems thinking, by examining the life and work of thirty of its major thinkers. It discusses each thinker's key contributions, the way this contribution was expressed in practice and the relationship between their life and ideas. This discussion is supported by an extract from the thinker's own writing, to give a flavour of their work and to give readers a sense of which thinkers are most relevant to their own interests.

The second book in the series, 'Systems Approaches' due for release shortly, is devoted to the main methodologies that have been developed by Systems scholars and are often deployed as part of systems practice. In their book the five methodological approaches covered are:

1. System dynamics (SD) developed originally in the late 1950s by Jay Wright Forrester
2. Viable systems method (VSM) developed originally in the late 1960s by Stafford Beer
3. Strategic options development and analysis (SODA: with cognitive mapping) developed originally in the 1960s by Colin Eden
4. Soft systems methodology (SSM) developed originally in the 1970s by Peter Checkland
5. Critical systems heuristics (CSH) developed originally in the early 1980s by Werner Ulrich.

The third book, *Systems Practice: How to Act in a Climate Change World*, written by Ray Ison and due for release in May 2010 deals with a simple logic:

1. What are the situations where systems thinking helps?
2. What does it entail to think and act systemically?
3. How can practices be built that move from systemic understanding to action that is systemically desirable and culturally feasible?
4. How can situations be transformed for the better through systems practice?

The book is introduced against the backdrop of human induced climate change. It is argued that climate change and other factors create a societal need to move towards more systemic and adaptive governance

regimes which incorporate systems practice. The systems practitioner referred to in this book is anyone managing in situations of complexity and uncertainty – it is not a specialist role or that of a consultant or hired ‘intervener’. Thus the book is structured so as to build a general model of systems practice by exploring an organizing question of Humberto Maturana’s namely: ‘What do we do when we do what we do?’

The fourth book, a reader edited by Chris Blackmore called *Social Learning Systems and Communities of Practice*, and also published in May, is concerned with how social and critical learning systems and communities of practice can inform future systems thinking in action. Her focus is on practice in multi-stakeholder situations that call for collaborative or concerted action within groups.

Part 1 of the book considers some of the early traditions of social learning systems. Extracts of the work of two authors are included: Geoffrey Vickers’ notion of appreciative systems, which captures many different facets of the dynamics of learning, is one of the influences of contemporary traditions of systemic and appreciative inquiry. Donald Schön’s view of learning systems strongly influenced many of the early ideas of ‘learning society’ and ‘learning organisations’ and continues to be drawn on today, by a range of practitioners. Part 2 explores a tradition that grew up in rural Australia - the Hawkesbury tradition of critical social learning systems. The work of Richard Bawden and his colleagues is central to this approach and they have synthesised many different theories in their work in systemic development which is distinguished by including ethical and epistemic dimensions. Part 3 concerns communities of practice which is a relatively recent coining of social learning systems but one that can be tracked back to the earliest times of humankind in the way that groups of people have collaborated and worked together.

This is a significant and timely commitment to the provision of Systems education by The Open University. In a research report just released by The Work Foundation called *Exceeding Expectation: the principles of outstanding leadership*, the first key finding was that outstanding leaders ‘think systemically and act long term.... Outstanding leaders achieve through a combination of systemic thinking and acting for the long term benefit of their organisation. They recognise the interconnected nature of the organization and therefore act carefully.’ This new suite of courses and programs offers opportunities for individuals across all professional areas to develop their systemic leadership and change capabilities.

#### Citations

Blackmore, C. P. (Ed.). (2010) *Social Learning Systems and Communities of Practice*. Springer: London.

Ison, R.L. (2010) *Systems Practice. How to Act in a Climate-Change World*. Springer: London.

Ramage, M. and Shipp, K. (2009) *Systems Thinkers*. Springer: London.

Reynolds, M. and Holwell, S eds (2010) *Systems Approaches to Managing Change*.

Springer: London.

### **New Books**

#### **Standing of Sustainable Development in Government**

<http://www.forumforthefuture.org/files/standing-of-sustainable-development-in-government.pdf>

I stepped down as Chair of the Sustainable Development Commission in July. Over the last year or so, I’ve been thinking quite a bit about my nine years as Chair – and about the impact the Commission has had on transforming both policies and practices across the whole of the public sector in the UK. On balance, I believe it’s a pretty good story. But it could have been better still, with a different kind of political leadership. And that’s what this Report is all about. I hope you find it both interesting and useful!

Very best wishes

Jonathon Porritt

**"Systems Thinkers", by Magnus Ramage and Karen Shipp of  
The Open University (UK), published by Springer.**

The book (the product of more than seven years of research) presents a biographical history of the field of systems thinking, by examining the life and work of thirty of its major thinkers. It discusses each thinker's key contributions, the way this contribution was expressed in practice and the relationship between their life and ideas. This discussion is supported by an extract from the thinker's own writing, to give a flavour of their work and to give readers a sense of which thinkers are most relevant to their own interests.

Systems thinking is necessarily interdisciplinary, so that the thinkers selected come from a wide range of areas—biology, management, physiology, anthropology, chemistry, public policy, sociology and environmental studies among others. Some are core innovators in systems ideas; some have been primarily practitioners who also advanced and popularised systems ideas; others are well-known figures who drew heavily upon systems thinking although it was not their primary discipline. A significant aim of the book is to broaden and deepen the reader's interest in systems writers, providing an appetising 'taster' for each of the 30 thinkers, so that the reader is encouraged to go on to study the published works of the thinkers themselves.

The thirty thinkers covered in the book are: Gregory Bateson, Norbert Wiener, Warren McCulloch, Margaret Mead, W. Ross Ashby, Ludwig von Bertalanffy, Kenneth Boulding, Geoffrey Vickers, Howard Odum, Jay Forrester, Donella Meadows, Peter Senge, C. West Churchman, Russell Ackoff, Peter Checkland, Werner Ulrich, Michael Jackson, Heinz von Foerster, Stafford Beer, Humberto Maturana, Niklas Luhmann, Paul Watzlawick, Ilya Prigogine, Stuart Kauffman, James Lovelock, Kurt Lewin, Eric Trist, Chris Argyris, Donald Schön, Mary Catherine Bateson.

List price of the book (paperback) is GBP 39.99 / EUR 69.95 / USD 89.95, though Amazon UK have it for less (GBP 33.99 at time of writing). ISBN 978-1-84882-524-6, 316 pp.

See it on Google Books: <http://bit.ly/lJnNx>, or at the publisher's website: <http://bit.ly/JWu9m>.

**"Cybernetics and Systems Theory in Management: Tools, Views, and Advancements"**

Edited By: Steven E. Wallis <[http://www.igi-global.com/reference/authors.asp?id=1928&pub\\_id=35221](http://www.igi-global.com/reference/authors.asp?id=1928&pub_id=35221)>  
Director, Foundation for the Advancement of Social Theory, USA

Cybernetics and Systems Theory in Management: Tools, Views, and Advancements provides new models and insights into how to develop, test, and apply more effective decision-making and ethical practices in an organizational setting. This critical mass of sought after knowledge with expert international contributions presents a cornerstone publication inspiring new directions of research and theory building.

<http://www.igi-global.com/reference/details.asp?ID=35221>

Steven E. Wallis, PhD

Director, Foundation for the Advancement of Social Theory (FAST)

Fellow, Institute for Social Innovation, Fielding Graduate University

<http://ProjectFAST.org>

13-digit ISBN: 978-1-61520-668-1

420 pages; 2010 Copyright

Price: US \$180.00 (hardcover\*)

\*Paperback is not available.

As management theory is critical to understanding decision-making and formal leadership in organizations, comprehension of their creation, structure, and application greatly benefits and furthers the development of management systems. Cybernetics and Systems Theory in Management: Tools, Views, and Advancements provides new models and insights into how to develop, test, and apply more effective decision-making and ethical practices in an organizational setting. This critical mass of sought after knowledge with expert international contributions presents a cornerstone publication inspiring new directions of research and theory building.

“While this book certainly presents innovative theories, the authors go one step further by engaging in a conversation that is essentially metatheoretical.”

As the founder and director of the Foundation for the Advancement of Social Theory (FAST), a non-profit venture under the auspices of ISI and Fielding, Steve is dedicated to supporting scholars and practitioners as they identify and pursue objective methods for advancing theory across the spectrum of the social sciences. His papers and chapters serve to advance the metatheoretical conversation and identify innovative paths for advancing social theory. He is the editor of “Cybernetics and Systems Theory in Management: Tools, Views and Advancements” (in press).

Applying those metatheoretical methods, publications include analyses in topic areas of complexity theory, CAS theory, organizational learning theory, social entrepreneurship theory, and others.

### **Planning with Complexity: An Introduction to Collaborative Rationality by Judith E. Innes\* and David E. Boher\*\*.**

Analyzing emerging practices of collaboration in planning and public policy to overcome the challenges of complexity, fragmentation and uncertainty, the authors present a new theory of collaborative rationality, to help make sense of the new practices. They inquire in detail into how collaborative rationality works, the theories that inform it, and the potential and pitfalls for democracy in the 21st century. Representing the authors' collective experience based upon over 30 years of research and practice, this is insightful reading for students, educators, scholars, and reflective practitioners in the fields of urban planning, public policy, political science, and public administration. Selected contents include: 1. Thinking differently for an age of complexity 2. How can theory improve practice 3. Stories from the field 4. The praxis of collaboration 5. Dialogue as a community of inquiry 6. Knowledge into action 7. Using local knowledge for justice and resilience 8. Beyond collaboration: democratic governance for a resilient society.

Published by Routledge

<http://www.routledge.com/books/Planning-with-Complexity-isbn9780415779326>

Hardback: 978-0-415-77931-9 \$150

Paperback: 978-0-415-77932-6 \$29.95

\*Professor of City and Regional Planning, University of California, Berkeley

\*\*Senior Policy Advisor, Center for Collaborative Policy, California State University, Sacramento

### **The Talking Point: Creating an Environment for Exploring Complex Meaning Thomas R. Flanagan & Alexander N. Christakis A Collaborative Project of the Institute for 21st Century Agoras**

The Talking Point is all about how people learn within groups. People can be much smarter than crowds if you measure “smart” as decision-making speed. Crowds can be much wiser than individuals if you measure wisdom by depth of understanding. It is possible to understand a great deal of information yet (or maybe because of this) you can also be slow to make decisions. If rushed, crowds will make poor decisions in spite of their wisdom. So... to get good group decisions on a time scale that will keep pace with policy development needs and social necessities, groups have to be supported so that their decision-making process can be accelerated. Much has been said and written about this problem over the years. It is dangerous to have the power of groups without the wisdom of groups, and it is tragic to have the wisdom of groups without the power of groups. The Talking Point presents a meeting point for the wisdom and power of groups through the use of Structured Dialogic Design.

With hopeful intentions, as a culture we have poisoned the well just when we need it most. We have touted design charrettes and stakeholder processes as engagement vehicles and then ignored, marginalized or corrupted the very input that we swore to hold as sacred. This has created a myth that large scale collabo-



ration is not possible, and the myth has led to considerable disillusionment among would-be participants and could-be sponsors. Structured Dialogic Design seeks to bust the myth about our limited capabilities to sustain boundary spanning collaboration. To bust this myth, Structured Dialogic Design needs to usher in a new wave of collaborative planning. Scholars have identified the Structured Dialogic Design methodology as the cutting edge of "third phase" science - where the reality of a situation embraces interactions between objective findings and subjective intentions.

The Talking Point provides a window for observing how Structured Dialogic Design has been put into practice and paints a panorama of the issues that confront complex social system design. This book is itself a bridge between scholarship and practice, written to be accessible yet anchored to major themes in cognitive psychology, information systems, social systems, and models of group learning. The book is an invitation for transformational leaders and those who support transformational leaders to pick up a new tool in the essential quest to put our nation and our world back on track toward sustainable futures. The Talking Point is a fresh source of water in a world that is thirsty for new ways of solving complex problems.

Order Online at <http://infoagepub.com/products/The-Talking-Point>

Paperback: 978-1-60752-361-1

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Web Price: \$59.19 (Reg. \$73.99)

E-Books are also available on our website.

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<http://www.infoagepub.com>

Skype: george.f.johnson

### **"Systemic Meology" A Soft Systems Approach on The Method to Find One's Essence Akira Takemura**

In this book, I perform systems thinking for phenomenological self-identity. I first search for a hypothesis that brings about the conscious amenity deficiency. Next, I set up an "uncertainty of one's essence" as a catch phrase, construct a conceptual model of personalization (Cognitive Metabolic Syndrome). And I think of and carry out a new feasible and desirable behavioural experiment model of self-study.

In detail, please see <<http://www.kaibundo.jp/syousai/ISBN978-4-303-72472-6.htm>>

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For this publication, the author received the Grant-in-Aid for Publication of Scientific Research from the Japan Society for the Promotion of Science (JSPS).

### **"Entropy Theory of Aging Systems : Humans, Corporations, and the Universe" Daniel Hershey**

Imperial College Press and the World Scientific Publishing Company, November, 2009.

It is a new dialogue with nature (and with ourselves). In the book Hershey presents ideas on Entropy (everything you ever wanted to know but were afraid to ask), Infinity (what is it, where is it), Information (stored and potential, what does it look like), the Universe (birth and death, what is beyond it), the Second Law of Thermodynamics (why worry about it, who passed this law), and Lifespan and Factors Affecting It, from an Entropy perspective.

This book shows the commonality of entropy principles which govern the birth, maturation, and senescence history of aging humans, corporations, and the universe. Hershey introduces an entropy theory of aging,

based on the ideas of Ilya Prigogine, leading to the thermodynamic concept of Excess Entropy (EE) and Excess Entropy Production (EEP). Daniel Hershey describes the aging process in humans in terms of EE and EEP . The book also describes the informational entropy theory and equations of Claude Shannon, and the Six Hershey Parameters which trace and mark the lifecycle of corporations. The book concludes by showing classical and informational entropy equations, and calculations to explain the birth, evolution, and death of our aging universe, and all of this in relation to the concept of infinity.

For more details, contact Daniel Hershey by e-mail [Hershey1@one.net](mailto:Hershey1@one.net) or [Daniel.Hershey@uc.edu](mailto:Daniel.Hershey@uc.edu)

### **Delivering Public Services That Work John Seddon**

[http://www.triarchypress.com/pages/Systems\\_Thinking\\_Case\\_Studies.htm](http://www.triarchypress.com/pages/Systems_Thinking_Case_Studies.htm) presents six clear Case Studies of Systems Thinking at work in the public sector. They demonstrate exactly how managers from different public sector organisations in the UK and New Zealand have reduced waste, cut inefficiencies, massively improved service quality and end-to-end times and transformed morale by redesigning their systems to face the customer.

The stories - from local authority departments like housing, roads, benefits and planning - chart the entire process of improvement: from agreeing on the core purpose of the service, to identifying and eliminating preventable waste. Each case study describes the measures taken and the results achieved.

This approach could revolutionise the delivery of public services around the world, not just in the UK. So anyone involved in public services (policy makers, administrators, service providers and service users) needs to know it's out there.

To read more or to order your copy at a 20%, pre-publication discount,

(books will be sent as soon as they arrive from the printers in early March)

please go to: [www.triarchypress.com/Seddon](http://www.triarchypress.com/Seddon) <http://www.triarchypress.com/Seddon>

### **It's not Fair! Beyond Capitalism and Socialism (The Science of Human Nature and Our Social Contract) Peter Corning**

I would like to take the opportunity to announce my new book, which is currently in-press at the University of Chicago Press. A brief description is pasted below. For those who are interested, a preview can be found in a paper of mine called "Fair Shares: Beyond Capitalism and Socialism" which appeared in the journal Politics and the Life Sciences. The paper can be found at our website: [www.complexsystems.org](http://www.complexsystems.org) <http://www.complexsystems.org> It was also the basis for the final chapter in my 2005 book, Holistic Darwinism: Synergy, Cybernetics and the Bioeconomics of Evolution.

Peter Corning writes: "The ayatollahs of economics have misled us – and themselves. It's now abundantly clear that the 'invisible hand' can morph into a sleight of hand and that a 'greed is good' ethic can result in legalized looting; an economy can come to resemble a winner-take-all, zero-sum game." Yet, as Corning shows, the emerging science of human nature reveals that most of us are guided (imperfectly) by a sense of fairness and reciprocity, and even altruism. In IT'S NOT FAIR! Corning argues that both capitalism and socialism fail the fairness test. He proposes instead a new economic and political vision that he calls a "bio-social contract," and he outlines a set of transformative economic and political reforms that could lead to what he terms a "Fair Society."