



# Newsletter

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International Federation of Systems Research*

*Editor-in-Chief: Gerhard Chroust  
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## *The New Executive Committee of the IFSR*



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*Dear Readers! Dear Members!*

*As you can see, there are quite a number of news to report this year:*

*In April 2004 the IFSR had its bi-annual Board Meeting, in parallel with the also bi-annual EMCSR-Conference in Vienna. The most important event was the election of the officers of the IFSR. No change was made to the Executive Committee, the same persons stay in office.*

*The Board Meeting is always followed by the Fuschl Conversation. It was again a very successful event, continuing in the tradition and also with the topics of the 2002 Conversation.*

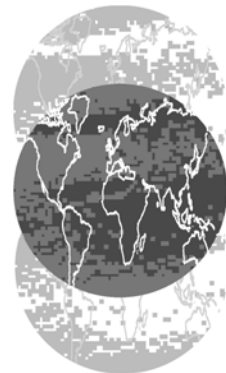
*A special highlight was the sudden appearance of the legacy of Ludwig von Bertalanffy. I will describe some of the exciting activities surrounding it.*

*Upon the suggestion of the ISKSS, the International Society of Knowledge and Systems Science, one of our Japanese members the IFSR will for the first time not only support a conference (like EMCSR, CAST and others), but the we plan to organize our own systems conference in November 2005 in Kobe, Japan.*

*Another highlight for IFSR is the publication of the 2<sup>nd</sup> editions of the "Encyclopaedia of Systems and Cybernetics" by Charles Francois. The IFSR has pledged that it will continue to maintain and continue its expansion and maintenance. Günter Ossimitz was elected Editor-in-Chief of the Encyclopaedia Project.*

*Last but not least I would like to point you to the homepage of the IFSR;*

*<http://www.ifsr.org>, where you find more information on many of the items the Newsletter touches and also useful links to further information.*





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## Fuschl Conversation 2004



On April 18 the ‘Fuschl participants’, 23 system thinkers from 10 countries assembled in the restaurant hall of the Seehotel Schlick on Lake Fuschl for a first briefing in order to commence the 12th Fuschl Conversation.

This time we had have had a longer lead time for the preparation, as the Executive Committee met in July 2003 at the ISSS Meeting in Crete and decided on most of the key issues for the Fuschl Conversation 2004. There were still, however, many last-minute surprises, unexpected cancellation of key persons etc.

On Sunday, April 18 the Fuschl Conversation started. The set-up and the structure were as they had been in the previous years.

Group work started on Monday morning. Every day was devoted to the group

discussions with short plenary reporting sessions on Monday, Tuesday and Thursday.



Kumkum Prasad admiring Salzburg

For Wednesday afternoon a special treat had been organized: We had booked a bus to

Salzburg, giving the participants a few hours being able to enjoy this lovely city.

Dinner was taken in Salzburg in a very nice, typical quaint restaurant with excellent food. The bus then brought everyone back to our hotel.



Gordon Dyer, Anthoneta Doncheva, Gerhard Chroust

As usual the Thursday evening - the last evening - brought out diverse talents of the participants: it was the traditional singing evening, and more than one of the otherwise serene participants suddenly came into the limelight as a show master, entertainer or singer.



Günther Ossimitz

Friday morning was taken up by reporting and discussion in the plenary. The Conversation ended, as usual on Friday noon,

leaving it up to the team leaders to later supply the summary reports of the Conversation which you will find in this Newsletter.



Mrs. Idinger, our host, and Gordon Dyer

Within the next months the groups are also obliged to provide a contribution to the proceedings volume of the Fuschl Conversation. The proceedings will contain the final reports and also individual think papers by participants. By end of October the proceedings of the Fuschl Conversation 2004 should also be in print

Again, on behalf of the IFSR, the Executive Committee would like to thank especially Gordon Dyer for his guidance, the team leaders, and all participants. And we should not forget one of the most important person – Christian Hofer who organised and provided the logistics and the infrastructure of this event.

Thanks to Günther Ossimitz, the pictures of the Fuschl Conversation 2004 can be found on <http://www.uni-klu.ac.at/~qossimitz/ifsr/fuschl2004fotos/>

The next few pages contain the summary reports of the individual teams. The summaries contain both an account of the group process and of the work produced within each team.

	<h2><i>Team 1: Building a New Agora</i></h2>
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<p>Team Coordinator: Angela Espinoza (COL/UK)</p>	<p>Heiner Benking (D) Gerhard Chroust (AT) Günter Hamza (AT)</p>
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*The team started off rather ambitiously by trying to define what we meant by an agora in view of the many types of agora under*

*discussion (remarks on the group process are in italics)*

## WHAT is a New Agora?

*Soon we had adopted a definition, mostly based on previous work by Angela and Heiner:*

A New Agora is "a group of people co-present (physically or virtually) on an on-going basis who share a purpose on social improvement and sustainability and have the will to progress towards an ideal future society which they (or their descendants) would inhabit". They do it by:

- Developing a meaningful dialog, including all the stakeholders, making decisions and bringing them into action
- Democratic decision making: Decision spaces are open to everybody affected by the decisions
- Self-organising and self-controlling, supported by facilitators
- 



Angela Espinoza, Günther Hamza, Reiner Benking

- Using systemic methodological, technological and human support
- Recognising being embedded in higher organisational and political levels and developing an evolving awareness on global goals and constraints.

A New Agora is not a rigid, discipline-based or hierarchical social structure like traditional political systems or traditional meetings by experts or scientists.

## WHY do we consider a New Agora?

*The advantages of an Agora were readily accepted by the group.*

The New Agora Project makes a real difference with traditional democracies in the following aspects:

- It creates a truly democratic decision making and a follow-up context
- It shows an example of a new idea of people-based government
- It offers an ICT supported context for democratic decisions
- It uses the best of systemic methodologies and approaches to:
  - reach agreements on main sustainability issues
  - communicate between people and government

- create pressures to government to act accordingly to people's main concerns

- It offers creative social communication mechanisms to handle complexity
- It allows emergence of social awareness of sustainability of the community
- It empowers people to have the proper knowledge to make public decisions.
- It offers people access to methodologies to reorganize the community to implement the citizens in fact-finding and to assure a continuous learning process

## HOW can we build a New Agora?

*This question brought the team discussion to a grinding halt. We could not agree how in a larger environment a New Agora could be set up. We turned around in circles: the definitions did not provide a realistic scenario, it was difficult to conceptualize and discuss practical applications and there always the question of whether it could be applied on a larger scale at all.*

*On Tuesday morning Günther suggested to pick a real-life scenario which should be the environment and the gauging application for an agora. We pretended that our team had been invited by the Mayor of a very large city (we took a blend of Berlin (better known) and Athens (more nostalgic associations). We were supposed to suggest a viable method to solve this city's problems by an Agora-type process. The mayor (Gerhard and Günther sometimes took the Mayor's hat) offered a large budget for the agora-process (around 1 Million Euro) if the team were able to convince him of the viability of the agora process to solve the complex and diversified problems of his city. This was our ongoing test-question: would the mayor accept our proposal? At each step we checked if our proposal was meaningful, feasible and acceptable to the mayor of the city.*

*We started designing a complete agora-process from the initial definition of the problems to the final (hopefully acceptable) solution of the city's problems. A key consideration was always the large number of stake-holders and as a consequence the huge number of individual agora-meetings (going up to 70.000 and more). We recognized the need to have some hierarchical and some peer-to-peer communication capabilities and a feasible reporting structure.*

*We estimated that the number of angoras could easily go into 70.000 angoras and more. Thus we realized that we have to have an initiation process from the mayor. We agreed that on a very high level the problems of large cities are known to everybody (traffic, pollution, anonymity, crime, etc.).*

Heiner pointed out that there exists a document from the European Commission, called Agenda 21, which is a catalogue of civilization problem, describing them to a rather fine level of granularity and showing relationships between problems.

## The Agora Process

### Organizational Concept

In order to continue with something tangible, we made the following assumptions:

- We assume that the city has a geographical and political division into districts and sub-districts providing an initial structure to the distribution of the Agoras.
- We envision a multitude of Agoras which will cover in a matrix fashion geographic, thematic and localized interests of the stake holders.
- Individual Agoras will concern themselves with the solution of some rather tangible and well defined problem which are related to their district or sub-district.
- A central Steering Committee will be institutionalized by the political leader(s), e.g. the Mayor. The Steering Committee will be the over-all supervisory element and will establish the main communication platform between the members of the various Agoras. They will communicate people's views to the political authorities.

Members of the Steering Committee should:

- be recognized representatives of each kind of problem situation, committed to the Agora's purpose, with high social and political competence, ability to choose the proper people and form a network and should make sure that people representing all sectors of the population attend the Agora call (including humanitarian NGOs, ethnic minorities, children, the disabled and so on)
- coordinate the global Agora process at each stage, including the constitution of the Stewards Group and the communication mechanisms for making an Open Call for each Agora public event.
- Get and coordinate required physical and technological infrastructure for on-going operation of the Agoras
- For each Agora a Steward Group will be established, in charge of facilitating the process with proper systemic methodologies and tools and proper information and communication technologies. We assume that there is a set of persons ("Candidate Stewards") available to be nominated for a specific Steward Group. Candidate for Steward Groups should:
  - Have proper knowledge on systemic approaches to facilitate the process, as well as facilitation skills, knowledge of local culture and

knowledge on the required technological support

- Support an Agora in the decision making process.
- Find the required group of experts to build up the supporting Knowledge Base for decision-making.
- Facilitate the required training to leverage knowledge of the steering committee members and build up links to other expert Knowledge Bases/ Agoras.
- Outside the agoras there will additionally be an "Expert group" helping in the issues debated, facilitating people's acquisition of expertise and helping to access outside information, e.g. from data bases. Members of the Expert teams should be able to have access to all kinds of knowledge bases; especially we expect them to use the Agenda 21 heavily.

### Start-up

The city authority selects the members of the Steering Committee. The Steering Committee selects a Group of Candidate. As a supportive measure Candidate Steward will be trained in the necessary methods, rules and technology required within all Agoras.

### Collecting Problems and Issues

The Steering Committee will make an open call using main media (TV, radio, internet) requesting initial input with respect to problems, feelings, indicators of importance thereof, etc. We imagine that by some means (Stewards?, Agenda 21, etc.) some problems will be initially identified and propagated.

At that stage some people willing to contribute and to cooperate in the discussion (stakeholder) will identify themselves. For example in a sub-district people may agree on main relevant issues as: traffic, health, pollution, water supply, violence, old industry dying, waste disposal, education, disaster (emergency) provisions.



Angela Espinosa, Günther Hamza, Heiner Benking

### Identify, Clarify and Modularize Problems

This initial raw set of problems will be classified, compared, annotated, correlated with the help of the Agenda 21 data base,

identifying correlation of problems, related problems not mentioned etc. These experts will try to trim these problems down to 'agora-size' (i.e. apportion these problems with respect to a size manageability by an agora, geographic applicability, perhaps demographic applicability), utilizing the Agenda 21 as a yard stick, source of information and conceptualization.

A main reason is that the problem at hand should not be overwhelming nor draw so many stakeholders that an agora-style discussion is impossible.

#### Call for a first Agora-event

We envision that agora's will be on a voluntary basis. Using available media, the population will be informed about the establishment of specific Agora, its purpose, topics, organization, date and time. The Steward Group will be inviting to participate and will negotiate the necessary physical and technological infrastructure for the event.

They ensure all stakeholders (including representative for all groups of civil society) have a voice in the event. Also, that everybody attending has access to required basic information (i.e. a summary of trimmed down, local Agenda 21 goals).



Gerhard Chroust, Angela Espinosa, Günther Hamza

#### Enacting an Agora

During the enactment of the Agora, e.g. performed like an Open House event, the Steward Group apply the agreed system methodology to facilitate collection of information on main issues, consider relevant problems (the most important and urgent ones). Problems that the people suggest should constitute the agenda for progressing towards a more sustainable community. The methodologies suggested at this stage could be, for example the Open Forum Technology; a proper technological support should be available like electronic walls voting system to facilitate people's suggestions on multiple issues.

If necessary the Steward Group would contact the group of experts in the issues agreed and access the Knowledge Data Base.

We expect that several meetings of an Agora will be necessary for a specific topic, one meeting not being enough for discussions. If

the Agora is called again the Steward Group will choose and use appropriate methods and tools for facilitating this stage of the process. For example, a Syntegration might follow the first agora-event (probably with a smaller more selected group) to integrate and prioritize people's suggestions.

#### Feedback to authorities

By the end of this stage, there will be a democratically agreed set of proposed solutions that will be related by the Steward Group to the Steering Committee and from there to the appropriate authorities for implementation.

#### Monitoring Stage

The Agoras will be the monitoring process and results in the implementation of agreed actions by the government. For this purpose the stewards group will develop and implement specific monitoring systems based on people observations of both process and results. Once more, systemic approaches will contribute to the systems design and implementation and open forums and democratic mechanisms for summarizing people's views will be in place.

#### Iteration of Agora discussions

By the end of the process a new learning cycle will start so that people will again review their priorities to solve sustainability issues and will agree on preferred directions for designing solutions, through the Agoras process.

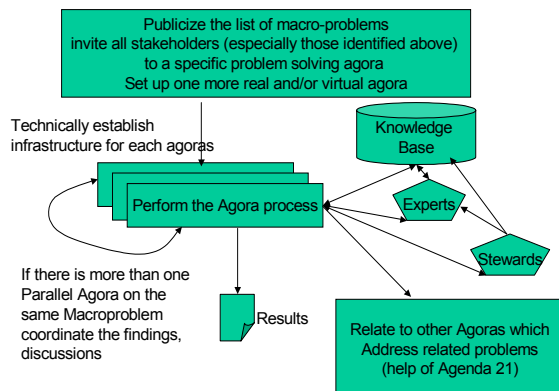


Fig. 1: The agora process

#### Key factors in the Process

- The list of identified key problems is published and people are invited to join a specific Agora to help solving the problem, with special consideration of those who have identified themselves being interested.

- Based on the response, a appropriate type of Agora is decided by the Stewards Committees, considering the number of persons responding, their geographic distribution, their abilities to discuss among themselves (language and ethnic considerations, handicapped, ...), preferences (internet vs. face-to-face). As a result one or more 'parallel Agoras' are set up, either with

identical problem definitions or variations/subproblems of the original problem


- The Stewards help and moderate with respect to the process enactment, communication, and psychological differences.
- The Stewards establish access to the Knowledge Base (if help is needed), to the Agenda 21 data base and to experts.
- The Stewards cross-communicate with the parallel Agoras and other Agoras which are working in related problems or in next-higher level problems.
- The Agoras find some solutions which are related – by the Stewards - to the Steering Committee to be implemented by the responsible decision makers.

- The members of the Agora reconvene at meaningful intervals to check on the progress and the appropriate implementation of the suggested solutions.

- The Agora dissolves when the problem is sufficiently solved.

References:

[1] Espinosa, A., S. Umpleby: Reflections on the New Agoras Project: A Report on a Fuschl Conversation in: Proceedings of the 47th Annual Conference of The International Society for the Systems Sciences on CD-ROM, paper no 006.

	<i>Team 2: Designing Systems for Human Betterment</i>
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Team Coordinator: Arne Colle (USA)	Ernesto Grün (ARG) Christian Hofer (AT) Farah Lenser (D)
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We continued our theme from past years with the goal of deepening our understanding of bettering, particularly the relation between designing systems and globalization.

We made principal use of two overarching questions:

- What are the implications of globalization in designing systems?
- What are the implications of designing systems on globalization?
- Consideration of this dynamic repeatedly informed our conversation.



Arne Collen, Farah Lenser, Christian Hofer, Ernesto Grün

Over the ensuing sessions that comprised our conversation, we mapped a series of trigger questions that served to mark, like lily pads across a pond, the route we traversed in and about our group theme.

The order of these trigger questions was:

- What is a good life?
- What is a better life?

- Is it ethical to design systems for others?
- Is the concept of betterment correct?
- Is designing systems an ongoing process?
- What are the implications of globalization for designing systems for human betterment?
- What are the influences on and for globalization on human betterment?
- Is bettering always a symbiotic win-win relationship?
- Who decides who wins?
- How do we ensure a win-win situation?
- Does bettering mean being able to access vital resources?
- How can we design a bettering system for human communication?
- For whom does it matter that we meet here at Fuschl?



Christian Hofer, Farah Lenser, Arne Collen, Ernesto Grün

Near the end of our week, we summarized the team highlights of our conversation in terms of the following points:


- There is a reciprocal cybernetic like loop or dynamic involving ways globalization impacts on us and we on it. This dynamic may be studied and understood in a myriad of forms from micro to macro levels.
- In designing systems for human betterment, it is vital to always have a choice.
- It is essential we give others a choice in what we design. Choice is a key to resolving the ethical issue of designing systems for others. Representing others in the process of design for betterment must come with their consent.
- Participation for betterment is optional, as every application has betterment and detriment for someone. Local actions do impact to have global consequences, especially when local actions are reproducibly concurrent countless times. Macro level consequences are emergent phenomena from such local actions that may not immediately be apparent to us, but nevertheless we must attain

comprehensibility of them, if we are to have the means to design systems for human betterment.

- Symbiotic relationships promote bettering. It is important to be sensitive to and conscience of consequence of one's actions for betterment, given the above points. Focus on vital resources involve an understanding of fundamental human interests. There are only questions; there are no answers.

We finished our last session acknowledging the absence of closure to conversation. Our group process felt open and vulnerable to the future. Our conversation was an unending process.

Our team presentation to the other teams on the final morning included the flow of trigger questions and our team highlights. Also, team members shared their personal accomplishments, learnings, surprises, and pearls of wisdom gained from the conversation.

	<h2 style="text-align: center;"><i>Team 3: Foundations of Information Science</i></h2>
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<p>Team Coordinator: Søren Brier (DK)</p>	<p>Anthoneta Doncheva (BLG) Christian Fuchs (AT) Wolfgang Hofkirchner (A) Gottfried Stockinger (A)</p>
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Soeren Brier

We wanted to propose a *unifying, non-reductionistic theory* of information, cognition, communication and human knowledge production because it is our view that such a transdisciplinary theory is necessary to understand, control and develop the use and design of computers in human and social

contexts as a part of the growing globalized knowledge society.

We choose to view the basic aspects of human social practice as *semiotic cognitive, communicative, and co-operative problem-solving processes* oriented towards:

1. Survival,
2. Social position and
3. Meaningful life.

Further we chose to see human social practice as relating to *4 basic aspects of reality*:

1. Nature
2. Life,
3. Consciousness and
4. Meaning or sense.

We decided to start a general theory of reality from the aspect of *human social practice (praxiology)* to avoid a reductionistic or idealistic point of departure outside our common sense practical world. Such a *complex praxiology* needs a complex ontology.



What we minimally want say about basic reality (ontology) is that it is a dynamical continuous field of vague spontaneous proto-elements that are in an ongoing recursive flux or process that can manifest into systems. Reality is a field of unmanifest protoelementary recursive processes. The foundation of reality is its process-structure, the concept of process-substance (Ernst Bloch) shows that the foundation of the world is its permanent dynamical change. This corresponds to saying that reality permanently organizes itself, it is a *causa sui* (Spinoza), it is its own reason; the essence of reality is that the only thing that *doesn't* change is that reality exists through permanent change.

One way of doing this is to use an evolutionary systems stage model. Such a model conceptualizes the interaction between structure and process as the emergence of metasystems that result in the dominance of supersystems. A metasystem is defined as a higher-order system that has emergent qualities that distinguish the metasystem from lower-order systems. Further each system consists of subsystems and is itself a subsystem of a supersystem. The concept of a metasystem refers to the diachronic aspect of evolution, and the concept of supersystem to the synchronous aspect of evolution.



Soeren Brief, Wolf gang Hofkirchner, Gottfried Stockinger, Christian Fuchs

In a metasystem transition we have an individual phase, an interactional phase, and an integrational phase. Comparing this to C.S. Peirce triadic philosophy the individual phase corresponds to Firstness (potentialities, proto-elements), the interactional phase to Secondness (dualistic processes and relations manifested through constraints and forces), and the integrational phase to Thirdness (triadic systemic regularities and patterns). This model of the metasystem transition can also to some extent be seen as corresponding to Hegel's three phases of dialectical development:

1. Thing-in-itself (identity),
2. being-for-another (negation),
3. being-in-and-for-itself (negation of the negation, higher-order identity).

But based on Peirce's theory we can make a further semiotic understanding of the metasystem transition: Firstness is a proto-element that has a potentiality to manifest into something such as a structure in the world. Secondness appears when two proto-elements make a dual relationship to each other (that can be of mental, material or social character). At this general level of theory it is not necessary to reduce the connection to any specific character. When the relation is specified and made more regular and stabilized, we enter the level of Thirdness. From a semiotic point of view this is when an interpretant emerges connecting the representamen with the object as well as itself with both. From this triadic relation semiosis emerges.

From a systemic point of view it can be emphasized that the triadic sign emerges as a new quality of reality, which is both structure and process. Semiosis means that there is an ongoing recursive relationship between the three elements that stabilizes itself in the form of a new systemic level with an organizational closure. We consider this triadic process and structure to constitute the most elementary self-organizing system out of which all other systems are built in different kinds of emergent networks.

Self-organizing systems are proactive and semiotic, which makes them cognitive, communicative, and co-operative. These are semiotic processes. We claim that self-organizing systems are sign-producing systems. To have a systematic relation to its environment, an operationally closed system has to establish, what Maturana and Luhmann call a structural coupling. This is a systematic change in the system's organization with the purpose of conserving the system's organization in the drift of evolution and history. The structural coupling makes signification possible. The structural coupling is a simple and crude representation of selected aspects of the environment and its influence on the self-organizing system's organization.

Structural couplings are also mutually made between self-organizing systems especially of the same type. We thus see the ability to make structural couplings as a prerequisite for the production of semiotic interpretants. In the semiotic process (semiosis) we first find an unspecific or undetermined irritation of the self-

organizing system. The structural coupling acts as a medium that allows the system to create an interpretant of the irritation that it is perturbed by; thereby the system produces a meaningful representation of the environment. The meaningful representation of the environment is in Peirce's semiotic terms the interpretant.

Systemically viewed this is an emergent phenomenon that structures the field of perception and cognition in a type of downward causation between the supersystem and the system. Thus a meaningful representation of the environment is created within the system and projected to the outside world producing a 'signification sphere'. Seeing the irritation as a representamen for outside objects does this. Hence the irritation becomes a sign of phenomena in an outside world that cause structural changes within the system and provoke the emergence of new qualities such as understanding.

Communication is thus based on reciprocal structural coupling of cognitive systems: system A produces a representamen of B' behaviour with the help of system B and B produces a representamen of A's behaviour with the help of A. Thus communication is a common production process of representamens and interpretants. Such production processes are autopoietic. Communication systems are emergent autopoietic phenomena.

At the level of human communication the question concerning the relationship between the encoded meaning and the decoded meaning is important. Stuart Hall has pointed out that a certain degree of determinism in the form of hegemonic meaning as well as a certain degree of indeterminism in the form of negotiated meaning and oppositional meaning is present in the cultural reception and meaning-production process.

1. Dominant meaning means are patterns of preferred readings.
2. Negotiated meaning is decoding that contains a mixture of adaptive and oppositional elements; and
3. Oppositional meaning is a form of decoding where the receiver produces a meaning that is alternative to the intension of the sender.

The main achievement of Hall is that he has shown that there is no necessary correspondence between encoding and decoding. Different interpretations exist in parallel and even in opposition and antagonism to each other. Meaning is not imposed, but is

multi-dimensionally produced in contested social struggles, hence signification is not only a consumption process, but itself an active production process.

Co-operation is the production of livelihood in the human life world. The communicative exchange of representamens is a prerequisite of co-operation. Human co-operation means that human beings find common understandings and meanings of certain aspects of the social world. These shared meanings are then objectified and represented in the form of objects of the social world that are part of the shared social environment of the human subjects involved in the co-operation process. The arts are one aspect of this.

The arts could function as a transdisciplinary mediator in science and society. Artworks are social products that reflect the social relationships of a certain period of society. But the arts ever since the emergence of modern society has developed a special position as a relatively autonomous system, one can't deduce the dominant forms and contents of arts from the relations of production and power of a social formation. This is what Adorno has called the non-identity of arts. The aesthetical dimension of arts goes beyond the facticity of society (that which is), it can anticipate possible futures of a beautiful, fair, and just society. Aesthetical forms can go beyond the alienation of modern society and can anticipate a happy and beautiful society. The arts can strengthen the creativity and imagination of human beings that are necessary for designing our systems in a co-operative and participatory manner. Art is a generalized medium that has the ability to reflect human endeavours and picture the latter in different ways. Although arts are primarily an aesthetical medium, it always carries a more or less explicit ethical dimension. So the aesthetics of arts can also have an ethical dimension. Thus the arts do to have ability to build the meta-language of culture uniting all its forms.



Gottfried Stockinger, Christian Fuchs

We argue that for bringing about that change and establishing an integrative society by co-operative social systems design, we need to understand the connections between the different types of systems in nature and society. Hence we need an integrative general theory of reality that guides our understanding and transformation of the world. Our group employed the method of participatory co-operative social systems design in to theorize co-operation and participation. We formed ourselves a self-organizing social meaningful praxis system that employed participatory, co-operative systems design in order to produce emergent results, i.e. foundations of a general theory of reality. This self-organization process involved three levels:

### Cognition

On the cognitive level we entered the conversation with different concepts and worldviews:

- Cybersemiotics
- Unified Theory of Information
- Social Semiotics

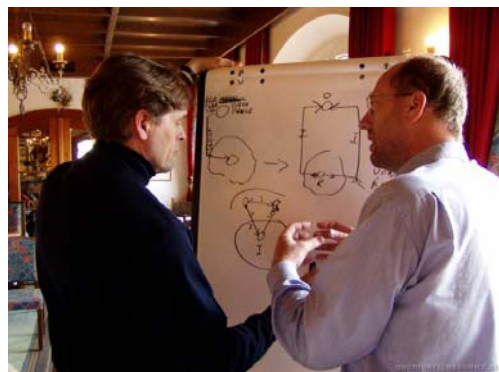
### Communication

Some of the participants have known each other quite some years prior to the Fuschl conversations. We have participated in the same conferences and later exchanged papers and commented on each other's approaches and there has been a mutual interest in going deeper in a productive way. This helped us in facilitating the discourse in a mutual respectful and creative way also with those participants


that had only known part of the group and exchanged with them.

### Co-operation

We focused on our unity in diversity and found a common language and a common understanding of the topics at hand. We established the foundations of a unified systemic theory of reality. The method of participatory systems designed worked for us so well that we have been very creative and productive and as an outcome have produced a whole scientific paper. We theorized methods and goals by making use of these methods, we not only talked about these methods, but actively practiced them in an outcome-oriented approach that aims at bringing about change in science and society and realizes the spirit of Fuschl as unity of practice and science. The Fuschl conversations practically showed us the creative power of co-operation.



Soeren Brier, Wolfgang Hofkirchner

	<h2><i>Team 4: Being Social Systems</i></h2>
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Team Coordinators: Gary Metcalf (USA) Charles Francois (ARG)	David Hawk (USA) David Ing (USA) Marilyn Metcalf (USA) Guenther Ossimitz (AT)
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The conversation began around the triggering question, "How are we social systems?" An agreed understanding at the beginning was that the point of the conversation was not the debate of theories, or even the building of theory per se, but an increased awareness of how we create and participate in the social systems of which we are parts. While the team encountered all of the mental / rational / theoretical difficulties in understanding social systems, in the end we

used the opportunity of Fuschl to speak from our own personal experiences. In other settings, we might have focused more on "model-building", as that type of knowledge is more transportable or replicable to external parties, but since we had the luxury of a week to experience "becoming" a social system, we took advantage of that.

Like all conversation groups, the first step involved establishing a basis for

communication, which is more than just understanding of words. In this case, the goal (recognized in hindsight and reflection) was that of creating a sense of symmetry between the members, which created the possibility for a deeper level of communication. (Symmetry was discussed in terms of the transition from states of dependence to independence to interdependence.) The first movement towards an initial sense of symmetry occurred through an exchange between two members that could have been conflict-oriented, but instead ended in the taking of a risk of sharing more personal information than was anticipated. This was treated respectfully, resulting in an increased sense of trust. (This was later interpreted as an exploration of how authentic the individuals in the group could be, as part of the larger collective.)



Gary Metcalf, Charles Francois, Marilyn Metcalf

By the end of the first day, a surprising level of initial cohesion had been reached with the group itself, but with this also came a sense that this group seemed to be seeking different guiding principles than the other groups in the overall conversation. This, in turn, helped to clarify the group's own focus and sense of symmetry even further.



Charles Francois, David Ing

The increased sense of symmetry and trust allowed for more risk-taking and more exploration and creativity at both the individual and group levels. By the second morning, an

identity seemed to be developing for the group as a whole, at the collective level, and a sense of identification by the individuals with this larger identity. By the second afternoon, a belief in the importance of the group's work by its members had developed to the point that the group felt it necessary to express these ideas actively (for instance, by not simply adhering to the norms of the larger group when these did not fit.)



Charles Francois

The third morning, individuals engaged in the use of metaphors and the telling of personal stories and examples. Prior days had had rather complete presentations of models and viewpoints, but the use of stories (e.g., the 101st cow) allowed for deeper implicit understandings. All groups had the afternoon off, which allowed a time for more informal discussions and reflections. By the fourth morning, the concepts and their relation to each other were clearer still, allowing for an increased sense of symmetry within Team 4. The symmetry was such that it became clear that all were comfortable with one person speaking on behalf of the whole group, and that that approach would be superior to each person having an individual voice at the time. This was situational, yet didn't seem to require even polling of the individuals of the group. Everyone came to same conclusion (to not rejoin the plenary session) without discussion.


A sense of asymmetry with the larger conversation group had appeared, especially around the issue of attempting to communicate between the groups. Specifically, there seemed to be need by a number of participants to engage in theoretical debate within the larger group context, while Team 4 had specifically avoided this so as to understand concepts at a more active, experiential level. This asymmetry was experienced by the group as almost an "enemy" in terms of difference in symmetries, though it was at a symbolic rather than a personal level.

The afternoon of the fourth day was spent in collective reflection about what had been learned through the week, for purposes of developing a summary. Attempting to capture this in traditional, theoretical terms, though, proved problematic for the group. Moving to abstract theory disconnected the individuals from a sense of meaning about what they had experienced. Capturing the process in a narrative format seemed to preserve more of its authenticity, while still providing information that might be shared with others (though not in the way that it was actually experienced by its participants.)

The "being" of social systems is apparently something that is experienced -- that we experienced -- but is difficult to describe (at a deep level) in an asynchronous way, after the

fact. "You had to be there". In a more general sense, everyone is involved in social systems everyday, and is constantly negotiating their way into new social situations. A key learning was that we need to come to new situations with open minds and a willingness to learn, and, if things work well, the social system can become cohesive. Cohesive doesn't imply that we agree on everything, or that we fall into a mutual codependence, but that we become interdependent, and create behaviours in the group as a whole that are not inconsistent with the beliefs of the individuals.

The end result was an initial description of human social systems with the potential of applying to groups ranging in scale from very small and limited in scope and time, to large and complex.

	<p><i>Team 5: Towards Y3K; a 2004 perspective on hominization with some emphasis on educational systems</i></p>
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<p>Team Coordinator: Gordon Dyer (UK)</p>	<p>Petros A.M. Gelepithis (GR) Yoshihide Horiuchi (J) Kumkum Prasad (INDIA)</p>
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This report provides a summary of the further progress made by the so-called Y3K group at the 12th Biennial Fuschl Conversation. At the end of the 2000 conversation a set of markers for an outline evolutionary guidance system had been proposed (Brahms et al., 2000).



Kumkum Prasad, Petros Gelepithis, Yoshihide Horiuchi, Gordon Dyer

This time we hoped to explore these ideas further and to draw on the expertise of two new members, Kumkum Prasad and Petros Gelepithis. We also revisited the notion of what it was to be human and noted the apparent possibility of ever increasing technological modification to the human species. We had previously discussed the prospect of robotic modification to replace worn out body parts. YH introduced a new possibility of genetic engineering to reduce susceptibility to disease, and whether such technology could be extended in future to reduce some human instincts for aggression and other less desirable behaviours.

The closed non-adaptive society was recognised as the most difficult, and likely intractable, problem. The subject of education systems for Y3K emerged as a repeating theme during our conversation. A new issue, linked to critical thinking capabilities, also emerged. This was linked to the proposition that - "what generations learn from their past and from their present has value in helping them define their own future" - is likely to apply throughout the passage of time to Y3K. So one general issue is what kind of contributions could we make for critical thinking capabilities for Y3K? The subject (what) and method (how) of learning are likely to change by Y3K, as

indeed how critical thinking is to be defined. However, the need for capabilities of critical thinking seems to be a universal factor in education, regardless of time. From another perspective, if Y3K people do not enhance their critical thinking capabilities, they would probably not be much advanced from us in 2004 in terms of human betterment, even if there has been considerable further technological progress. As a minimum this seems to require that future generations are educated to be much more aware of:

- their evolutionary path (hominization);
- their role in relation to machines that they may invent to take on laborious tasks;
- the need to reduce sources of inequity; and
- their relationship with their environment and consumption of its resources.



Kumkum Prasad, Petros Gelepithis, Yoshihide Horiuchi, Gordon Dyer

• However, we also require that the education system develop other knowledge and skills e.g. develop design literacy in the young and instill an appreciation of art and music (which have common primitives).

A conversation between four people of four different ethnic groups, representing both western and eastern traditions of thought, was a challenging and appropriate setting to continue conversation on the Y3K issue. We were able to reflect back to the outcomes from the 2000 and 2002 Fuschl conversations to seek reinforcement and extension to the conclusions drawn then. Bringing in new expertise from complexity theory and artificial intelligence was very useful in introducing new concepts for consideration. The concept of interacting local agents (from complexity adaptive system theory) producing a new level of self-organisation and emergence, led us to conceive of multi-levels of systems up to the

international level as a possible basis for achieving emergence and global change.

We remain challenged by many fundamental considerations. We wish to help future generations, yet we are acutely aware that we cannot design or even make design suggestions for them. We are also in a dilemma over the issue of progress, and what it means for a future situation to be “better”. Any ideas we offer must remain very open-ended. Thus we did not achieve one of our original aims “to propose specific actions that we, or others, can take in the next several years as first steps toward the types of ideals we identified previously”. We did briefly consider the possibility of a range of simulations having the aim of helping groups to recognize the value of others, namely with others with whom they are normally in conflict. This could lead to concrete proposals in due course.

Thus our outcome is of an interim nature, which requires development, probably at the 2006 Fuschl conversation. Nevertheless, the team felt satisfaction in making some headway towards defining our task for making some potential contribution to future generations.

#### References:

Brahms, S., Dyer, G., Horiuchi, Y., Jenks, L., Rowland, G. (2000). *The Y3K Problem: Evolutionary Guidance toward the Year 3000*. In Chroust, G. and Hofer, C (eds.), *Report on The Tenth Fuschl Conversation*, Austrian Society for Cybernetic Studies.

Dyer, G., Hammond, D., Horiuchi, Y., Otsubo, M., Rowland, G. (2002). *Actions and Evolutionary Guidance for Y3K: Towards a New Meta-systems Paradigm*. In Chroust, G. and Hofer, C (eds.), *Report on The Eleventh Fuschl Conversation*, Austrian Society for Cybernetic Studies.



Christian Hofer in the plenary session



## *IFSR Board Meeting 2004*

On April 14, 2004 the IFSR held its bi-annual Board Meeting.

Several important issues were on the agenda:

- Report of the President and the Secretary/Treasurer on the past two years: Both reports were unanimously accepted.

- Election of the Executive Committee for the next two years: All member of the Executive Committee were re-elected into their functions (see below)

- Due to some changes in Austrian law it was necessary to modify the Constitution of the IFSR. This was also taken as an opportunity to incorporate into the new constitution some rules and conventions which were informally adopted over the years. Key changes were:

- The IFSR can have between one and three vice presidents

- The number of votes per member association was clarified

- The IFSR will now have two auditors for its financial audits.

- Four types of membership were defined: Full member, Affiliate Member, Supporting Member and Honorary members

- The remaining changes were of minor importance.

- Based on a motion by Prof. Gu the Board approved IFSR's intention to hold its own conference in November 2004 in Kobe, Japan.

Our new Japanese Members, the International Society of Knowledge and Systems Science offered to provide the local organisation.



## *Executive Committee of the IFSR*

On April 14, 2004 the following persons were elected as officers of the IFSR for a period of two years:

President:

Prof. Dr. Ji Fa GU  
Institute of Systems Science, AMSS  
Chinese Academy of Science  
Zhongguancun,  
Beijing 100080 China

Vice-President:

Prof. Dr. Matjaz Mulej  
University of Maribor  
Faculty of Economics and Business  
Razlagova 14  
Maribor 2000, Slovenia

Vice-President:

Gary S. Metcalf  
President InterConnectionsLLC,  
1544 Winchester Avenue, Suite 704  
Ashland KY 41102  
United States of America

Secretary/Treasurer

Prof. Dr. Gerhard Chroust  
J. Kepler Univ. Linz  
Institute for Systems Engineering and  
Automation  
A-4040 Linz, Austria



## *Support of EMCSR*

Traditionally the IFSR supports the European Meeting on Cybernetics and Systems (EMCSR) by sponsoring the conference fee of several young students coming from countries with weak currencies. For the EMCSR 2004 the following persons were supported:

*Symposium: Mathematical Methods in Cybernetics and Systems Theory*

Capkovic, Frantisek

An Approach to the Control Synthesis of DEDES

Stankovic, Radomir S.

MatriSymposium -Valued Decision Diagrams in Representation of Complex Systems

*Symposium: Biocybernetics and Mathematical Biology*

Huhn, Zsolt Rate and Phase Coding in a Biophysical Model of a Hippocampal Place Cell

Lansky, Petr

Medicament Noncompliance and Its Effects

*Symposium: Management, Organizational Change and Innovation*

Fedotova, Natalia

Theoretical and Methodological Approaches of Franco-Russian Cross-Cultural Research

*Symposium: Soft Computing and Knowledge-Based Systems*

Konjicija, Samim

Adaptive Mutation in Genetic Algorithm with Binary Coding - Theory and Applications of Artificial Intelligence

Kapishnikov, Andrei

Intelligent Optimization of Investment Rules on the Basis of Genetic Programming and Technical Analysis

*Symposium: Computer Control and Robot Systems*

Huba, M.

Design of Gain Scheduled Pole Assignment for SISO Systems

*Symposium: History of Cybernetics, Information Technology and Systems Research*

Horakova, Jana

From Rossum's Universal Robots to the Post-Human

Stankovic, Milena

Hydrointegrator by Mihaila Petrovic - Alas. A Contribution to the Design of Computing Machines

*Symposium: Paradigm Changes Due to Component-Based System Development*

Grün, Ernesto (discussion participant)

In addition the IFSR sponsored the invitation a prominent systems scientist to give the so-called Ashby-lecture – established in the honour of W. Ross Ashby (1903 – d. Nov. 15, 1972), one of the founders of Cybernetics. Amongst many other ideas, he pioneered the concept of a "**homeostatic machine**".

This year's lecture was given by

*Prof. Dr. Luigi Ricciardi*, Università di Napoli Federico II, Italy

**„From Macroscopic To Ultramicroscopic: Some Current Problems In Biocybernetics“**



At the Board meetings we also were able to welcome two new members. The Board unanimously approved their status as Full Members:

- The „Deutsche Gesellschaft für Kybernetik“ (German Association for Cybernetics), Germany
- The „International Society of Knowledge and Systems Science“ (ISKSS), Japan

As a consequence, the IFSR has now the following members:

American Society for Cybernetics  
Asociacion Argentina de Teoria General de Sistemas y Cibernetica  
Asociacion Mexicana de Sistemas y Cibernetica




Association française des sciences et technologies de l'information et des systèmes  
 Australian and New Zealand Systems Group  
 Austrian Society for Cybernetic Studies  
 Bulgarian Society for Systems Research  
 Centre for Hyperincursion and and Anticipation in Ordered Systems  
 The Cybernetics Society  
 The Learned Society of Praxiology  
 Deutsche Gesellschaft fuer Kybernetik  
 Gesellschaft für Wirtschafts- und Sozialkybernetik  
 Global Institute of Flexible Systems Management  
 Greek Systems Society  
 Instituto Andino de Sistemas  
 International Society for the Systems Sciences  
 International Society of Knowledge and Systems Scienc  
 International Systems Institute  
 Italian Association for Research on Systems  
 Japan Association for Social and Economic Systems Studies  
 The Korean Society for Systems Science Research  
 Management Science Society of Ireland  
 Polish Systems Society  
 Slovenian Society for Systems Research  
 Sociedad Espanola de Sistemas Generales  
 Systeemgroep Nederland  
 Systems Engineering Society of China  
 United Kingdom Systems Society

	<i>The IFSR Website</i>
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More information on the IFSR can be found on the IFSR's homepage <http://www.ifsr.org>, including a color version of this Newsletter.

Some beautiful pictures of the Fuschl Conversation can be found on <http://www.uni-klu.ac.at/~gossimit/ifsr/fuschl2004fotos/>

	<i>L. v. Bertalanffy returns home!</i>
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It was due to a succession of favourite coincidences that the scientific bequest of Prof. Dr. Ludwig von Bertalanffy, the founder of the General Systems Theory, has re-appeared and has been secured for the scientific community.

A small second hand book store in Buffalo, in the state of New York, the last home of Ludwig von Bertalanffy, was sold to another owner in its totality.

When the new owner made an inventory of his new acquisition he found in the remotest corner of the little shop six banana boxes with some books, letters etc. And he detected the name of Bertalanffy. Fortunately he remembered having seen an announcement of

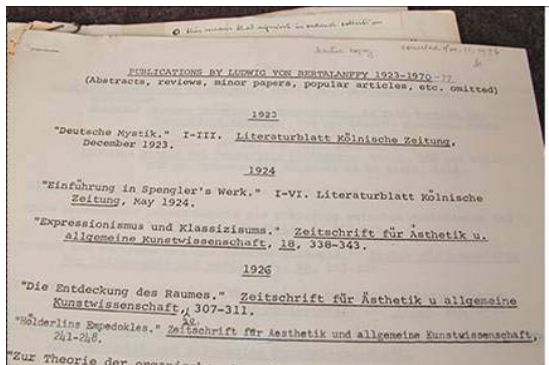
a 100-year celebration in Vienna for Bertalanffy.

The collection consisted of approximately 400 personal letters, several original manuscripts and a collection of books and journals.



The valuable collection was publicly offered for sale. Realizing the danger of dispersion and loss plus inadequate preservation the IFSR, led by Gerhard Chroust, was quick in finding a proper archive for this precious find. Hectic activities ensued since the seller wanted to sell promptly.

With the substantive help of Prof. Wolfgang Hofkirchner, Technical University of Vienna, and the considerable financial support of the Bertalanffy-family in Austria it was possible to acquire the lot.



Ludwig von Bertalanffy, born on Sept. 19, 1901 in Atzgersdorf near Vienna, was a graduate in Theoretical Biology and from 1946 to 1949 was Head of the Zoological Institute of the University Vienna. In 1949 he immigrated

to the United States. His last years, until his death in 1972 were spent in Buffalo, USA.

Based on biology he founded the General Systems Theory as a holistic, interdisciplinary view of systems in various disciplines and a study of their commonalities.

The complete collection will be preserved, analyzed and published by the newly founded „Bertalanffy Centre for the Study of Systems Science“ with the support of the Austrian Society for the History of Informatics.“

Summing up this success, Gerhard Chroust said:

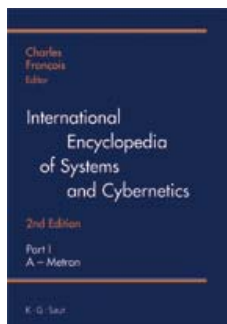
The history of the acquisition of the Bertalanffy legacy shows the importance of international associations like the IFSR. Only by with the support of international networking and the personal involvement of many systems people this collection was kept together but was also put into the hand of responsible, competent scientist, who will honour it and make it available to the general public.

On behalf of the IFSR and the systems community I want the thank everybody involved, primarily the Bertalanffy family for their considerable financial support and Prof. Wolfgang Hofkirchner for his personal engagement. I am happy that the Bertalanffy legacy has found its way back to the country of his origin. “

G. Chroust

	<p><i>Book: Charles Francois: Encyclopaedia of Systems and Cybernetics</i></p>
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**SECOND EDITION OF THE INTERNATIONAL ENCYCLOPEDIA OF SYSTEMS AND CYBERNETICS**  
*Charles François (editor)*



The second edition of the Encyclopedia , appeared in August last; it has been updated and augmented in more than **320** pages, **1700** articles, some of them with figures, tables and

diagrams, and **1500** bibliographical references, compared with the first edition of 1997.

A complete name index , operates as a direct referencing system, bringing together the work of each author cited, in order to facilitate the localization of their work, theories and concepts, all along the whole edition.

Lists of Institutions dealing with Systems and Cybernetics and related disciplines, were also updated. The Bibliography covering **up to the year 2004**, offers more than **4500** references, ordered chronologically for each author. It permits to appreciate the conceptual evolution of their research and also gives the numbers of the entries where they have been quoted.

A considerable number of references is given in french, german, italian, spanish and other languages, all of them easy to locate.

The International Encyclopedia of Systems and Cybernetics covering a wide scope, is an indispensable reference tool for the study and application of very up to date

methodologies, which are a valuable response to the increasing complexity of world issues.

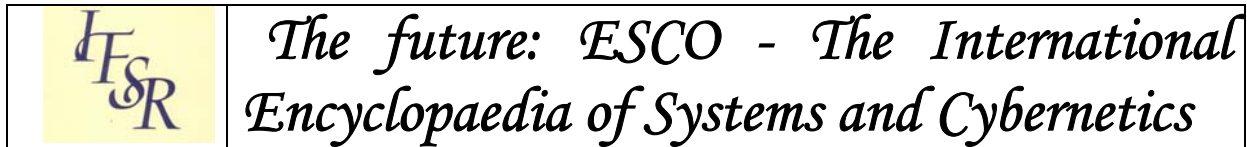
The Encyclopedia has been declared is a work of special interest by the International Federation of Systems Research.

**KG Saur Verlag-Thomson, München, 2004**

[http://www.saur.de/download/prospekte\\_english/0000010744.pdf](http://www.saur.de/download/prospekte_english/0000010744.pdf)

Reference:

K G Saur Verlag  
2004, 2 Volumes  
VI, 741 pages. Hardbound  
€ 350,--  
ISBN 3-598-11630-6



### **ESCO: The International Encyclopaedia of Systems and Cybernetics goes online**

The long awaited second edition of Charles François' great *International Encyclopaedia of Systems and Cybernetics* has been published in two volumes in August 2004 by Saur Verlag, Munich. Charles had announced that this is his last edition. He appointed Günther Ossimitz to continue his work – based on 21<sup>st</sup> century technology and hosted by IFSR.

ESCO – the **Encyclopaedia of Systems and Cybernetics Online** is about to start as an electronic complement to the second printed edition of the Encyclopaedia. Technically it is based on Mediawiki technology (<http://mediawiki.org>) – a great open source tool which is also used for Wikipedia – the free online Encyclopedia (<http://wikipedia.org>). All new and updated articles will be put at ESCO – thus making ESCO an online-companion of the printed Encyclopaedia. This work has already started at <http://esco.uni-klu.ac.at>

Other than the International Encyclopaedia – which was collected almost exclusively by Charles François alone, ESCO is designed to be the product of a collaborative effort of a team of contributors. The main contributors of ESCO are designated to form the future editorial board of ESC after retirement of Charles François. A Scientific Committee of the IFSR will oversee the whole work of ESCO.

### **How is ESCO related to the printed Encyclopaedia?**

Concerning the scientific rigorosity and interdisciplinarity in the scope of systems sciences ESCO is dedicated to the high standards of founding editor Charles François. It is not affiliated with or sponsored by the publisher of printed Encyclopaedia, K.G. Saur. Yet the promotion of printed Encyclopaedia is an important aspect of ESCO - thus helping to make further printed editions of the

Encyclopaedia commercially feasible. ESCO will be based on the keywords, links and registers of the printed Second Edition. Updates of articles will be based on the version given in the Encyclopaedia.

### **Which Expansions are planned?**

ESCO will introduce new types of material, which extends ESC. Major features will be:

- *Basic Articles*: Overviews and introductions to special systems fields; written by international experts in the field.
- *Biographies of important Systemists* (like William Ross Ashby, Bela A. Banathy, Ludwig von Bertalanffy, Jay Forrester, Paul Watzlawick, Norbert Wiener)
- Reviews of important *Systems Books*
- Information about *Systems Communities*: Reports about Systems Societies, Conferences, Journals, Web Resources
- *"The next Generation"*: Contributions of young systems specialists
- *Directory of Systems Scientists*: short web-page, can be auto-created by specifications of scientist via web-form; offering systems expertise.
- *Systems Bibliography* (affiliated - using some bibliographical database system)
- *Systems Newsletter*: regular information medium about ESCO and related topics.

### **What are the long-term perspectives of ESCO?**

ESCO is designed in the long term to become a virtual community of people interested in systems issues. The Online Encyclopaedia should serve as a core information basis for this community. Thus ESCO might become an acronym for "**Encyclopaedically interested Systems Community Online**". Of course the Online Encyclopaedia should act as a database for any future printed edition of the International Encyclopaedia of Systems and Cybernetics.

ESCO is designed to be used for free as an online information resource for everyone: Experts, students, businessmen, journalists and the interested "general public".

### **Partners of ESCO**

ESCO is designed to operate in a network of partnerships, offering mutual advantages to all participants. Main Partners will be:

- IFSR with all Member-Societies
- K.G. Saur
- University of Klagenfurt as a host for the web-material
- Bertalanffy Society of Studies of Systems and Cybernetics

### **Join the Team!**

ESCO is in search for any systems experts which are willing to share their expertise via our online Encyclopaedia. ESCO-Contributors have the privilege to edit articles of the printed Encyclopaedia and to add new articles which are not yet found in the second edition of the International Encyclopaedia of Systems and Cybernetics.

For further Information contact:

Guenther Ossimitz

University of Klagenfurt [guenther@ossimitz.at](mailto:guenther@ossimitz.at)

or go directly to <http://esco.uni-klu.ac.at/join>.



### **Book: Adolf Adam, G. Chroust: *From the celestial clockwork to the Statistical Factory***

- *What were Wittgenstein's school grades?*
- *Why should we celebrate September 20, 1623 as the birthday of mechanical data processing?*
- *Who supported the machinery for the Russian Census in 1890?*
- *How is Johannes Kepler related to wine casks?*

If you are able to read German, than these and many other questions will be answered by Adolf Adam's book (on pages 7, 88, 160 und 70 respectively).

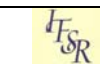
Adolf Adam, Professor emeritus of the Kepler University Linz passed away in August 2004. In an inimitable way he has collected the material in this book ,as an attempt to describe the heavenly statistics together with the mechanised data processing, which accompanies it. The book is full of factors, historical views, stories, and surprising cross

links. The second edition completes the original book (published 1973) by a CDROM containing an extensive index, three laudationes of Adolf Adam and the complete text plus pictures in machine readable form for further research work.

Reference:

Adam, A. and Chroust, G.: Vom himmlischen Uhrwerk zur statistischen Fabrik, second edition, 2004  
Trauner Verlag Linz (ISBN 3-85487-673-3)  
and Österr. Computergesellschaft  
(ISBN 3-85403-185-8)  
€ 25.-

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*End of the Newsletter*