IFSR Newsletter

Official Newsletter of the

International Federation for Systems Research

Editor-in-Chief: Gerhard Chroust
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Dear Readers!

With this Newsletter I have to say good bye: after 27 years I step down as the Secretary General of the IFSR and put my responsibilities, including the IFSR Newsletter and the IFSR Website, into younger hands.
Included you find a report of the IFSR Board Meeting (April 2018) with the result of the election of the new Executive Committee and the short team summaries of the IFSR Conversation 2018. Additionally I include my nostalgic look back at my 27 years of service.

Wishing all of you, the IFSR, and its new EC much success and good luck

Yours truly
Gerhard Chroust

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GOOD BY IFSR! **3**

OUTGOING PRESIDENT'S REPORT **8**

IFSR BOARD MEETING 2018 ..... **9**

INCOMING PRESIDENT'S MESSAGE **12**

IFSR HONORS THE OUTGOING SECRETARY GENERAL GERHARD CHROUST **13**

THE 19TH IFSR CONVERSATION 2018 ..... **13**

TEAM 1: SYSTEMS PRACTICE **15**

SYSTEMS PRACTICE - THE ART OF CONNECTED THINKING 18

TEAM 2. WHAT IS SYSTEMS SCIENCE? **20**

TEAM 3: ACTIVE AND HEALTHY AGING **23**

TEAM 4: DATA DRIVEN SYSTEMS ENGINEERING APPROACHES **25**

NEWS FROM IFSR MEMBER SOCIETIES **27**

ISSS CONFERENCE 2018 27

SEA AND LIFE 2 9

IFSR OFFICERS 1980 – 2020 ..... **30**

ACCESSING NEWS FROM THE IFSR! **30**

Good By IFSR!

The last Newsletter edited by Gerhard Chroust

Dear Members of the IFSR and dear friends!

After 27 years as Secretary General of the IFSR I felt it was time to step down. It has been a long and exciting time during which I have served the IFSR, full of sometimes dramatic changes. I feel thankful for and honored by this chance and want to share with you some of my very personal experiences. I apologize for any distortion and omissions of events and trends.

Growth and Governance :

In 1981 the IFSR was founded by three persons with visionary qualities, representing three outstanding systems societies: Prof. George J. Klir (Society for General Systems Research, now: ISSS), Prof. Robert Trappl, Austrian Society for Cybernetic Studies, and Prof. Gerard de Zeeuw, Systeemgroep Nederland. It was founded as a Federation of scientific societies from the system field.

Initially we had only 3 founding members who each paid a substantial membership fee. All others were non-voting members without having to pay. When I took office in 1992 the IFSR had 17 members, 4 more were welcomed in 1992. In 1994 the Board decided to give all members equal rights; this also required all to pay a membership fee. Around 2000 we introduced (again) the status of 'Affiliate Member', without fee to accommodate members which were less involved in the IFSR. Now, by 2018, we are proud to have 46 members.

The daily business was administered by the Executive Committee (EC) consisting of the President, one to three Vice Presidents and a Secretary/Treasurer, later called Secretary General. At its founding the IFSR was lucky to receive a fairly generous yearly grant from the Austrian government. We even opened a (rarely used) office next to the IIASA-Institute in Laxenburg near Vienna. We held our Board Meetings (= the General Assembly of the member societies) every second year, presenting and accepting reports on activities and finances from the outgoing Executive Committee, making important decisions (e.g. accepting new members) and the electing the officers for the next two-year period. Until 2014 the Board Meeting was held parallel to the EMCSR-

Conference in Vienna, 2016 and 2018 it was held directly after the IFSR Conversation in Linz. On several occasions we held a special half-day 'Strategy Meeting' with our members in order to plan for the future.

Between Board Meetings communication with members took place essentially by way of the IFSR Newsletter, later augmented by e-mail messages; since 2015 this has been supported by the e-mail system Mailchimp. In 2013 we adopted a new logo.

Old logo

New logo

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Celebrating IFSR's 25th anniversary

On April 19, 2006 we celebrated the 25th anniversary of the IFSR: We invited many previous officers and friends of the IFSR to at the meeting, looking at past activities and trying to foresee the future [Chroust-06a, Chroust-07].

With the growth of the IFSR and with more recognition of systems thinking the biennial meetings did not prove to be sufficient. As a consequence the EC held a yearly EC-meeting and finally introduced monthly video conferences using Skype and Webex.

In 2012 we also introduced electronic voting for our members in order to make key decisions (including acceptance of members) in between Board Meetings.

A severe blow hit us in 2005: the Austrian Government, responding to a general budget cut, stopped their generous grant for the IFSR - we had to finance IFSR's expenditures without external support. However, we have managed to keep going until now by reducing financial payments for several activities like the IFSR Conversations and the Ashby lectures.

The restriction of only accepting societies as members has turned out to be a handicap for the IFSR, since we do not have a direct contact to individuals who might gradually take over certain duties until they might volunteer to become officers of the Federation. An initiative which would allow individual members has been turned down by our society members for fear of competition. As an exception we give 'Outstanding Contribution Awards' to individuals for services to the IFSR; for exceptional services we honor individuals by appointing them as 'Fellows'. At the moment the IFSR has three Fellows : Charles Francois (Argentina), Robert Trappl (Austria) and Gerhard Chroust (Austria).

The "International Encyclopedia of Systems and Cybernetics" :

One of the most valuable resources in the systems field - even today - is Charles Francois' "International Encyclopedia of Systems and Cybernetics" [Francois-04]. Published in 2004, it is a voluminous collection of approx. 4000 entries on 740 pages presenting different definitions for most of the key concepts of Systems Sciences. Soon the wish arose to have this Encyclopedia in computer readable form. Also the necessity became apparent to be able to augment the Encyclopedia by new scientific knowledge. Unfortunately the publisher did not concede the copyright to the IFSR until 2017, when Wolfgang Hofkirchner was finally able to secure the copyright for the BCSSS with the intention of continuing Charles Francois' work. The IFSR has emphasized its interest and support for this challenging project. At the moment, however, the future of this project is unclear.

The Bertalanffy Legacy :

The story of the Bertalanffy legacy is thrilling in itself, convoluted with many surprises. Out of the blue in 2004, the offer to sell or auction all or parts of the (up to then unknown!) Bertalanffy legacy appeared on the Internet. Thanks to my colleague Franz Pichler, I identified the acquisition of the complete legacy as one of IFSR's key objectives. After some difficulties Wolfgang Hofkirchner, with the financial support of a generous sponsor, succeeded in buying the complete legacy in October 2004. It contains approx. 500 letters, some 150 monographs and manuscripts together with 120 published articles, many books and scientific magazines. Fortunately Bertalanffy's wife had drafted a detailed documentation of the

material. So the archiving was not too difficult [Chroust-06b]. Wolfgang Hofkirchner founded the "Bertalanffy Center for the Study of Systems Science" (BCSSS) with the main objective of maintaining and safeguarding the Bertalanffy legacy. And we developed very ambitious plans [Chroust-08]

The "International Academy for Systems and Cybernetic Sciences" (IASCYS) :

In 2003 Profs. Jifa Gu and Matjaz Mulej, recognized the need for a platform of outstanding system scientists, and therefore conceived the vision of an Academy. With the help of the IFSR, it was founded in 2010 at a systems conference at the Sichuan University, in Chengdu, China. Since 2016 the IFSR is an independent organisation. Currently it has 61 members from all parts of the world and is growing steadily.

IASCYS founding conference 2010

The Journal of Research and Behavioral Science

The founders of the IFSR have also started a scientific periodical in 1984, initially called 'Systems Research', covering the evolving field of Systems Sciences. When I took office the Journal had problems. Michael Jackson convinced Wiley publishers to publish the journal and after difficult negotiations also involving Bela Banathy (then IFSR President) it was merged with the 'Journal of Behavioral Science'. As a consequence it was published under the present name 'Systems Research and Behavioral Science' with Michael Jackson as Editor-in-Chief. Thanks to the effort of Michael Jackson, with the help of Amanda Gregory, it has become highly respected in the systems community. Also luckily - which is of high importance to the IFSR - it provides considerable yearly royalties for the IFSR. Currently it publishes 6 issues per year, with a considerable waiting list of submitted and reviewed papers.

The International Series on Systems Science and Engineering :

In 1985 a book series with the official name "International Series on Systems Science and Engineering"(the "IFSR Book Series" in short) was founded. Its Editor-in-Chief was George Klir supported by an illustrious Editorial Board. It was a highly selective series, committed to the highest standards with respect to quality and rigor. 26 books have been published until now. When George Klir passed away in 2016, the IFSR (prominently lead by Gary S. Metcalf and Mary C. Edson) in close connection with our publisher Springer undertook to redirect and revitalize the Series. A new Editor-in-Chief, George Mobus, took over and is now actively acquiring book titles to be published.

The IFSR Newsletter :

From the foundation of the IFSR on, a Newsletter has been published. In the beginning it was the key communication medium between our members. It was published 4 times a year. Approximately 3400 copies of each issue were distributed among the members of our member societies.

First IFSR Newsletter edited by Gerhard Chroust and Stephen Sokoloff

When I took office I also restarted the Newsletter initially together with Stephen Sokoloff and from 1995 as the sole Editor-in-Chief. The Newsletter was type-set (at considerable cost) with only a few pictures. In 1995 we switched to desk-top-publishing to produce the Newsletters. From 1995 to 2000 part of the edition was printed in the USA thanks to Gordon Rowland, reducing distribution delays and mailing costs. For me, as the Editor-in-Chief, it meant having two formats (European A5 and American Letter). In 2000 we decided to print only documentary copies at the Johannes Kepler University and to distribute the Newsletter in

electronic form.

Until 1999 we had a highly appreciated 'Calendar Of Events' on the last page of the Newsletter. It was of no concern that some of the information was 3 months old. In those days there was sufficient delay between an announcement and actual meetings! The just-in-time announcement of events on the IFSR Web site (gradually since 1996) has finally made the Calendar obsolete.

As a consequence, while I served as Editor-in-Chief, the Newsletter changed from a news supplier to a retrospective publication medium for archival purposes.

The Web Site 'ifsr.org' :

In 1996 the expectations of our members made it necessary to establish an online information basis: a web site.

Prof. Magdalena Kalaidjieva (Bulgarian Society for Systems Research) provided the technical support from her institute and the first IFSR Web site appeared in 1996. For the first time we had the means with which to offer our archival material (past Newsletters and proceedings) to a larger audience. Older issues and proceedings were scanned. For technical and organizational reasons I had to migrate the web site to Drupal around 2005 and to WordPress in 2013. In the meantime the web site had become a major information outlet for the IFSR, providing both up-to-date and archival material (Newsletters, proceedings from IFSR Conferences, minutes of Board Meetings, announcements of events, reviews of events, our members' achievements, etc.). Unfortunately the functions of WordPress do not fulfill all needs of the IFSR.

The IFSR NEWS Flash :

In order to pro-actively communicate with the Systems Community (also beyond IFSR members) I have created the 'IFSR News Flash'. At irregular intervals (once or twice a month) short pieces of information are sent to our member societies and in addition to individual subscribers. Today we count more than 300 subscribers!

The Fuschl/IFSR-Conversions :

IFSR's lighthouse projects are the biennial Fuschl Conversations. When I took office in 1992 I detected a large expense item labelled 'Fuschl Conversation', seemingly without any reason or outcome. So I attended the next 'Fuschl Conversation' (1994) with the intention of cancelling this 'useless' expense. It turned out differently!

There I met Bela Banathy, the 'inventor' and 'good spirit' of Conversations and a group of approx. 25 participants in 5 teams, engaged in serious and profound discussions of issues vitally important to mankind. I recognized the impressive potential and value of the Conversations and returned converted! Instead of cancelling it, I decided to give to the Conversation more structure, visibility, and prominence: I introduced formal application for participation, listing of participants and - foremost - proceedings to be published after the conversation (with an ISBN number), in order to show to the outside world the topics and outcomes of the Fuschl/IFSR Conversations. From then onward we have published a short report written by each team in the IFSR Newsletter and later the more comprehensive team reports in a proceedings volume (to be found on the IFSR homepage in register 'Publications').

The Conversations were a big success. Initially (until 2008) we held them in small hotels on the Lake Fuschl (Pension "Seewinkel", later in See-Hotel Schlick), hence the name 'Fuschl Conversation'. The cozy atmosphere of these hotels provided much of the charm of the Conversations. The rising demands on the technological infrastructure (WLAN, beamers, ...) forced us to select more professional venues. We stayed 2010 in Pernegg, Lower Austria, and from 2012 onward we found an ideal place in the seminar hotel St. Magdalena on the outskirts of Linz, Austria. As a consequence we changed the name to 'IFSR Conversation'. Lack of funds have forced us, unfortunately, to stop the generous subsidies of the Conversations: In 2018, for the fist time, the IFSR did not pay a substantial subsidy to the Conversation. 2016 brought another 'first': we published the proceedings with a print-on-demand shop gaining publicity and wide-spread availability [Edson-17]].

EMCSR and Ashby Lecture :

IFSR has maintained a very close relation with the OSGK and has supported the biennial EMCSR-Conferences:

Until 2014 we selected and financed an "Ashby-lecturer" for each conference, a prominent systemist presenting ideas, concepts and visions. We organized an IFSR-Session and occasionally even an 'IFSR-Day', where the

IFSR took full responsibility for speakers and presentations. As one of my remaining tasks, I will try to collect the Ashby lectures to preserve their speeches for posterity.

The (only) IFSR-Conference (Kobe 2005) :

In 2004 our Japanese member, the International Society for Knowledge and Systems Science (ISKSS), led by Prof. Y. Nakamori and K. Kijima, surprised the IFSR by offering us to take over the Programme Chairmanship of an international conference planned for Kobe for the year 2005. While the Japanese side took care of all logistics and provided substantial and generous travel funds, the IFSR was responsible for the scientific side of the conference. I was elected as the Programme chairman. It was a fascinating cultural experience organizing a conference on the other side of the globe, set in a completely different cultural environment. We were greatly impressed by the hospitality of our Japanese hosts. The conference was a great success and we published the proceedings of the Conference [Chroust-05].

Closing Ceremony of Kobe 2005

Looking back

Looking back at 27 years of service I have been able to work for 19 presidents/vice-presidents, produced 50 Newsletters and 12 proceedings of IFSR Conversations.

I am proud and thankful for what I have been able to contribute to the operation and growth of the IFSR for so many years. I would like to thank all member societies and their members for support and trust, and often patience. Special thanks go to the members of the different Executive Committees I have had the pleasure to work with.

I also feel honored to have been given an 'Outstanding Contribution Award' and the title of a 'Fellow of the IFSR'. Being an IFSR Fellow I will stay connected with the IFSR.

I wish the IFSR and its members
the very best and further success.

Gerhard Chroust

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Outgoing President's Report

held at the IFSR Board Meeting, April 13, 2018

Mary C. Edson

Good afternoon

to the Members, Executive Committee, Colleagues, and Guests of the IFSR and welcome to the 2018 IFSR Board Meeting.

We have just concluded the 19th biennial IFSR Conversation and now our focus shifts to updating you about here the IFSR is and where its future is going. Before we begin, let us take a moment to review and appreciate some of the accomplishments we have made in the last two years. Through the leadership of the IFSR's Executive Committee, the following projects have been achieved:

- The IFSR Book Series has been relaunched with the leadership of George Mobus as Editor-in-Chief and Springer as Publisher. George presented a Publications Workshop during the IFSR Conversation this week and will be reporting details of the progress of the Book Series later in this meeting. We thank Gary Metcalf for his sustained dedication to the development of the series for his assistance in achieving this goal.
- Outreach to existing member organizations by attending member meetings like the American Society for Cybernetics in Olympia, WAS (June 2016) and the INCOSE SysSciWG Workshop in Jacksonville, FL (January 2017), which strengthen ties within the Systems Community.
- Outreach to potential member organizations by attending conferences like the System Dynamics Conference in Cambridge, MA (2017), which build new ties within the Systems Community.
- Outreach to potential new interest groups like the U.S. National Laboratories, which build and broaden the reach of the Systems Sciences Community.
- Continued partnerships with existing Systems Sciences collaborators like ISSS, whose next meeting will be in Corvallis, OR, on July 23-27- with David Rousseau hosting it as President and Jennifer Wilby continuing to master plan all details of its execution. The IFSR EC gave presentations at ISSS 2016 in Boulder and 2017 in Vienna.
- New memberships have been cultivated to widen the reach of the IFSR and the Systems Community, such as Malik Management.
- New projects, such as collaborations in Systems Science Education, which Ray Ison has pursued. Systems Literacy, championed by Peter Tuddenham, was the focus of the 18th biennial IFSR Conversation and continues to develop into new opportunities for the Systems Community..
- The Systems Research Team (SRT) is an innovative collaboration between the IFSR and the ISSS that began at the 17th biennial IFSR Conversation. The SRT, through Springer, published *A Guide to Systems Research: Philosophy, Principles and Practice* in 2017.

This type of collaborative project and publication is part of the IFSR's continuing educational mission.

- The 18th biennial IFSR Conversation's Proceedings (2016) have been published and are now available for online ordering through the on-demand publisher BoD, e.g. via Amazon (see below) .
- The IFSR Website has been maintained by Gerhard. We thank him for keeping it current for the membership's information with announcements, activities, and publications.
- The IFSR Newsletter has been maintained by Gerhard. We thank him for keeping it current for the membership's information with announcements, activities, and publications.
- *Systems Research and Behavioral Science* (Wiley), edited by Michael Jackson, continues to be a vital part of the IFSR's educational mission and we appreciate the alliance as a platform for our members' International Academy for Systems and Cybernetic Sciences contributions to the field.
- The IASCYS (the International Academy for Systems and Cybernetic Sciences) also known as "the Academy," is now fully independent from the IFSR. It is now a collaborative group of scientists headed by Stuart Umpleby as President.
- The administration of the IFSR membership has been maintained by Gerhard and we thank him for over 25 years of acting as Secretary General. He has been the glue that keeps this organization functioning and we wish him well as he moves into new ventures in the Systems Sciences and beyond.

These are just some of the projects that the Executive Committee has undertaken and I would like to recognize all the members of the committee Gary, Gerhard, Jennifer and Ray, for their time, dedication, and effort toward bringing these goals to fruition.

Thank you for giving me this opportunity to serve you and I look forward to working with the new Executive Committee as it develops its vision for the IFSR's future.

Truly

Mary C. Edson

IFSR President (2016-2018)

This is an abridged version of the Minutes of the Board Meeting, the full Minutes can be found on the IFSR Web-site http://www.ifsr.org/wp-content/uploads/2018/06/p20180413-extern-total-c.pdf?

1 Opening

o Mary C. Edson (President IFSR) and Edit Fabo (WCSA) attended via SKYPE

o DECISION: The final Agenda (tabled) is approved

o DECISION: The Minutes of the previous meeting (April 2016) are accepted as a true and accurate record.

2 Report from the President (Mary C. Edson via Skype)

This report can be found in this Newsletter on the previous pages

3 Report from the Secretary General (Gerhard Chroust)

Electronic Voting was very successful: faster and more responses

Change of Constitution (accepted by e-voting on April 2, 2018) IFSR will have the following membership classes:

Full Members :

- **Scientific Members** (they are usually non-profit organizations with a primary interest in research in the systems area)
- **Educational Members** (they are primarily interested in education and dissemination of knowledge about " Systems Sciences, like Systems Literacy etc.),
- **Systems Practice Members** (their main interest is in the application of Systems Science, its theory and methods),
- **Sponsoring Members** they provide the IFSR with financial or in-kind support.

Affiliate Members (they are primarily interested in receiving information),

Fellows (honored for having provided outstanding contributions to the IFSR)

Note (after the Board Meeting): When submitting the new constitution to the Austrian Authorities they found that in the meantime some changes require additional changes to our constitution (not related to the member ship categories). Therefore the Constitution is not yet in effect for the IFSR. The new General Secretary will handle this .

New members

- MALIK Management Institute, St. Gallen, Switzerland, Full Member per 1. Nov. 2016.
- SDS (Systems Dynamics Society, Full Member per 1. May. 2016

4 IFSR-Collaborations

IFSR cooperates closely with:

- WOSC (World Organisation of Systems and Cybernetics) : Main Contact: Prof. Raoul Espejo
- UES-EUS (Union Europenne de Systemique/ European Union for Systemics) : Main Contacts: Prof. Pierre Bricage and Prof. Mrs Andree Piecq
- IASCYS (International Academy for Systems and Cybernetic Sciences) :It became independent from the IFSR in Sept. 2016. It has now 58 Academicians, "http://www.iascys.org/"

5 19th IFSR Conversation Linz 2018

Wa held Sunday, April 8 to Thursday April 13, 2018 in St. Magdalena, Linz. The Proceedings of the Conversation are planned to appear in December 2018.

The Conversation had 26 participants in 4 teams:

- Team no 1:Systems Practice - Leader: Nam Nguyen, Constantin Malik
- Team no 2: What is Systems Science -Leader: Gary R Smith
- Team no 3: Active + Healthy Aging - Leader: Gerhard Chroust, Shankar Sankaran
- Team no 4: Data Driven SE Approaches - Leader: Edward Carroll

6 IFSR Publications

Proceedings of the 18th IFSR Conversation Linz 2016

A successful change of procedure was to publish these proceedings by BoD, a print on demand publisher. They are offered by several electronic book stores (e.g. Amazon and BoD).

Edson, M.C. and Metcalf, G.S. and Tuddenham, P. and Chroust, G., Systems Literacy - Proceedings of the Eighteenth IFSR Conversation 2016, Books on Demand, Norderstedt, Germany, Feb. 2017, 104 pages, ISBN 978-3-7431-7913-4

IFSR International Series on Systems Science and Engineering - Relaunch!!

With the passing away of George Klir the position of the Editor-in-Chief of the Series became vacant. After consultations and discussions including Springer Publisher, George Mobus accepted the position job took as Editor-in-chief of this Series:

Professor Em. George MOBUS, Institute of Technology,
University of Washington, Tacoma, Campus Box 359592 4333,
Seattle, WA 98105-9470, USA.

IFSR Journal of Systems Research and Behavioral Science

The Journal is well managed by Michael Jackson and is - fortunately - also very profitable.

IFSR NewsFlash

The Secretary General IFSR sends important news directly to the member representatives and subscribers (via MailChimp). Currently it has approx. 300 subscribers, subscription can be made via the IFSR Home page.

7 Financial Status and Outlook

A copy of the financial situation for 2016-2017 and for Jan. 1, 2018 to March 31, 2018 was distributed to the Board.

There are two sources of income for the Federation: royalties from the Journal “Systems Research and Behavioral Science"(JSRBS) (published by Wiley Interscience) and the membership fees. The financial outlook of the Journal is very healthy, thanks to the great success of the Journal. The income from membership fees and JSRBS together, however, is definitely too small to cover all expenses. The financial situation is not very good. We have to reduce costs (difficult) or to increase income (very difficult!). We have still a reasonable buffer for some future eventualities.

The Board approves the financial statement and relieves the Executive Committee from its duties.

8 Election of the new Executive Committee

Ray Ison proposes a new Executive Committee. They wereapproved by the Board

- o President : Professor Ray Ison
- o Secretary General : Mag. Stefan Blachfellner (not present)
- o 1st Vice President : Dr Louis Klein
- o 2nd Vice President : Dr Nam Nguyen

The new officers will take their office by May 1, 2018

Closing Session of the IFSR Conversation on April 13, 2018

Incoming President's Message

Report from the IFSR Executive Committee (EC)

Following a day's strategic planning after the General Assembly meeting in Linz in April the EC has met on several occasions to further administrative changes and pursue challenges confronting the IFSR. The issues that have preoccupied us are

:

1. Reviewing the Constitution as there are anomalies between the current English and German versions and we wish to be assured of our responsibilities under Austrian Law. At the same time we recognize the need for the IFSR to review its scope and income if it is to survive. For this reason we shall be approaching Members later in the year with both an update and a set of proposed changes to our Constitution.

2. Setting up new administrative procedures following the election of a new Secretary General. We have had to negotiate complicated procedures with changes to our bank, web-domain, letterhead etc. as well as negotiating new service contracts. These all take time (including a trip to Vienna on my part to sign bank documents).

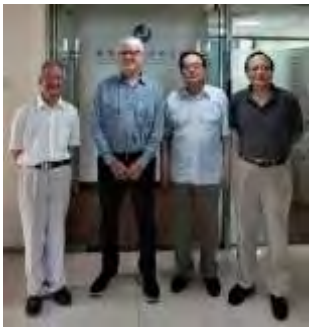
3. Commissioning and considering quotes for new webpages and strategies to enhance our communications with and from members.

4. Reviewing the administrative functioning of the IFSR Journal, Systems Research & Behavioral Science. This is at the moment the major source of revenue for IFSR. We are working closely with Prof. Mike Jackson, the current editor to strengthen our working relationship, develop new administration arrangements and address longer term legacy matters. Working together with members we would like to be able to enhance the journal profile, including impact factor.

5. Maintaining oversight of the IFSR/Springer book series which George Mobus, with assistance from Gary Metcalf, continues to manage. Any prospective authors please contact George.

6. Representating IFSR. There was EC representation at the ISSS Conference in Oregon over the summer and presentations made to retiring Secretary General Gerhard Chroust on his appointment as Fellow of IFSR. In July I presented two talks in Beijing as the guest of the Institute of Systems Science, Chinese Academy of Science (see presentation plaque) as well as the Eurasian System Science Research Association (ESSRA). Prof Yang Xiaoguang, who is prominent in our member society, The Systems Engineering Society of China, was present at both talks (see attached photos).

Ray Ison



Prof. Yan Jiyi, Prof. R. Ison, Prof. Gongbing Peng and Liu Yongsheng

IFSR honors the outgoing Secretary General Gerhard Chroust

During the IFSR Board Meeting on April 13th , 2018 in Linz the then IFSR Vice President Gary S. Metcalf presented to the outgoing IFSR Secretary General Gerhard Chroust an „Outstanding Contribution Award for exceptional leadership and service as the Secretary General of the IFSR 1992-2018“ .

On July 27th, 2018 the Executive Committee of the IFSR honored Gerhard Chroust by appointing him as Fellow of the IFSR „in gratitude for many years of leadership and support as General Secretary, Editor of the Newsletter, Webmaster and Organizer of the Conversations for the IFSR 1992-2018“

The 19th IFSR Conversation 2018

Sunday, 8 April – Friday, 13 April, 2018

Themes and Teams

Conversations were introduced by Bela H. Banathy at around 1980 as an alternative to the classical conferences. They were in response to the insight that the greatest benefit for participants were due to the discussions and conversations between participants and not so much as a result of the formal content of presentations.

Bela's life work focused on education and learning systems. His design of the Conversations reflects his philosophical understanding of complex adaptive social systems as self-organizing entities, showing emergent properties, and enabling learning in a supportive environment (matrix hierarchy) through iteration and recursion. He designed a safe space for collaborative dialogue that promoted inquiry and innovation (Byrne, 1998; Jenlink & Banathy, 2008).

Historically the IFSR has held Conversations every second year.

Initially this took place in a small, cozy inn in Fuschl on the shore of Lake Fuschl, near Salzburg. Initially they had been organized and coordinated by the International Systems Institute (ISI), in cooperation with the IFSR and several other member organizations of the IFSR. Increased demands on accessibility and professional infrastructure made it necessary to move for one Conversation to Pernegg, Lower Austria, and the last four (2012 and 2018) to a seminar hotel in Sankt Magdalena near Linz, Upper Austria. In total we have held 19 Conversations.

Additional Conversations of the 'Fuschl type' have been were organized by members of the IFSR in many locations around the world: three in Spain, two in Crete, one each in England, Finland, Greece, and Hungary.

Conversations continue to be held in other places, e.g. four Conversaciones del Extremo Sur (2012 to 2017) in the southern most city of the world, Ushuaia, Argentina.

Additionally since 1989 twelve international Conversations have been held at the Asilomar Conference Center in California and have established the Asilomar Conversation Community (ACC) as a conversation community of the International Systems Institute.

For a Conversation a small group of scientists meet for several days to discuss a topic of scientific and social importance under self-guidance. No papers are presented; the participants discuss their topic face-to-face.

Bela defined a conversation as (Dyer-15}:

a collectively guided disciplined inquiry

- an exploration of issues of social/societal significance
- engaged by scholarly practitioners in self-organized teams
- who selects a theme for their conversation
- which is initiated in the course of a preparation phase
- leading to an intensive face-to-face learning phase.

In the IFSR Conversations traditionally 3 to 6 teams of four to eight members meet for five days to develop conceptual models and intensify their understanding of their team's topic. They are o free to modify their topic. After the end of the Conversation the teams document their findings at first in a short report and then in a more comprehensive report in proceedings of the Conversation (Edson, 2018).

The short reports from the 19th IFSR Conversation are in this Newsletter below. The proceedings will be published by the end of 2018.

Previous Proceedings can be found on http://www.ifsr.org/index.php/publications/conversations/

For the 19th IFSR Conversation (2018) we had a significant number of excellent proposals submitted. submissions, The final topics and team leaders were:

1. Systems Practice – Nam Nguyen and Constantin Malik
2. What is Systems Science? - Gary Smith and Jennifer Makar
3. Active and Healthy Aging – Gerhard Chroust and Shankar Sankaran
4. Data Driven Systems Engineering Approaches – Ed Carroll

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Team 1: Systems Practice

Nam Nguyen and Constantin Malik

Nam Nguyen (AU / VN)
Constantin Malik (CH)
Joséphine von Mitschke-Collande (CH)
Olaf Brugman (NL)
Marc Pierson (US)
Nguyen Van Thanh (VN)

Overview

This short report summarizes the activities and outcomes of the Systems Practice Team (SPT) at the 2018 IFSR Conversation in Linz, Austria. The 2018 SPT consists of mainly systems practitioners: Dr. Nam Nguyen (team coordinator), Dr. Constantin Malik (co-team coordinator), Dr. Olaf Brugman, Mr. Andreas Hieronymi, Ms. Joséphine von Mitschke-Collande, Dr. Thanh Van Nguyen and Dr Marc Pierson.

The chosen topic “Systems Practice” is relevant to a new type of membership in the IFSR constitution. It is also ‘close to hearts’ of many systems scientists, whom would really like to take Systems Sciences more into practice.

This topic is also closely related and complementary to several recent IFSR Conversation topics, e.g. “Systems Research”, “Systems Literacy” (an effort to educate/inform a broader audience about systemic approaches to research and practice).

The SPT shared their experience of applying systems approaches in practice. The team also discussed how to make systems approaches, systems tools more applicable to their respective fields and practice, with specific cases such as public security, smart city and leadership development in Vietnam, community healthcare in the US, cyber-security in Europe, etc.

The list below provides a very brief summary of the SPT’s Conversation. The final report of the

SPT will be contain details about individual item s and will be published in the official Proceedings of the Conversation

1. **Expectations for the week**
   These were submitted in advance to the IFSR Conversation organizers, as well as shared among the SPT members.
2. **Brainstorming the Systems Practice 'landscape'**
   The SPT started with a brainstorming session of the Systems Practice 'landscape'..
3. **Sharing Experiences and Applications**
   SPT members then shared their experiences and applications of systems approaches in various contexts:
   1. Application of systems science in leadership and management on non-traditional security threats
   2. Application of systems science in building up smart cities meeting indicators of security – welfare – safety in the context of the 4th industrial revolution
   3. Malik SuperSyntegration for Smart Cities (Brainport Smart District)
   4. Technical infrastructure for self-organizing in US counties
   5. Application of systems science for large scale societal transformation toward sustainability
   6. Experiences of applying systems thinking and gamification in educational setting
   7. Application of systems science at the national level for a community bank
   8. The Art of Interconnected Thinking – Starting with the young (Malik Ecopolicy)
   9. Application of systems thinking for everyone
4. **Key questions from the Team**
   After the 'sharing' session, the SPT posed some key questions on the ways moving forward.
5. **Systems Practice: 14 key variables …**
   Various elements were discussed and thought of as relevant factors to Systems Practice, which were then categorized into 14 key variables (see Fig. 1 below).
6. **Interconnecting the key variables of Systems Practice**
   The Malik Sensitivity Model was used to develop a System Model of the key variables of Systems Practice and their interrelationship.

Further issues which we discussed and which will be described in detail in the final report:

7. **Assessing strength of interconnection – Impact Matrix**
8. **'Rainbow' Effect Levers**
9. **System Model «Systems Practice» … and how they are interconnected**
10. **Effective Leadership and Management is the most essential variable for moving the system «Systems Practice»**
11. **Partial simulation scenario: current situations**
12. **Key suggestions and actions**
    Below are some brief recommendations which we identified.

1. Building a framework to steer, regulate and control the various issues that Dr. Thanh presented and the Ministry of Public Security (MPS) has to deal with smart cities, sustainability, security, ecology, environmental protection, etc.
2. The above framework could be set up first as a Transformation Control Centre (TCC) – both for managing the non-traditional security issues and enhancing the smart cities indicators
3. The TCC would have tools and systems that enable the leaders and managers to visualize the actions as they are happening, with real-time checking and controlling
4. The Malik SuperSyntegration (MSS) methodology would also be very useful to apply to solve the issues that Dr. Thanh presented

(e.g. examples of MSS applications for Brainport Smart City in the Netherlands, Cybersecurity for one of the biggest finance and insurance companies in the world, etc.)

5. Also important is to design the right customized training courses in systems thinking, systems tools, effective management, etc.

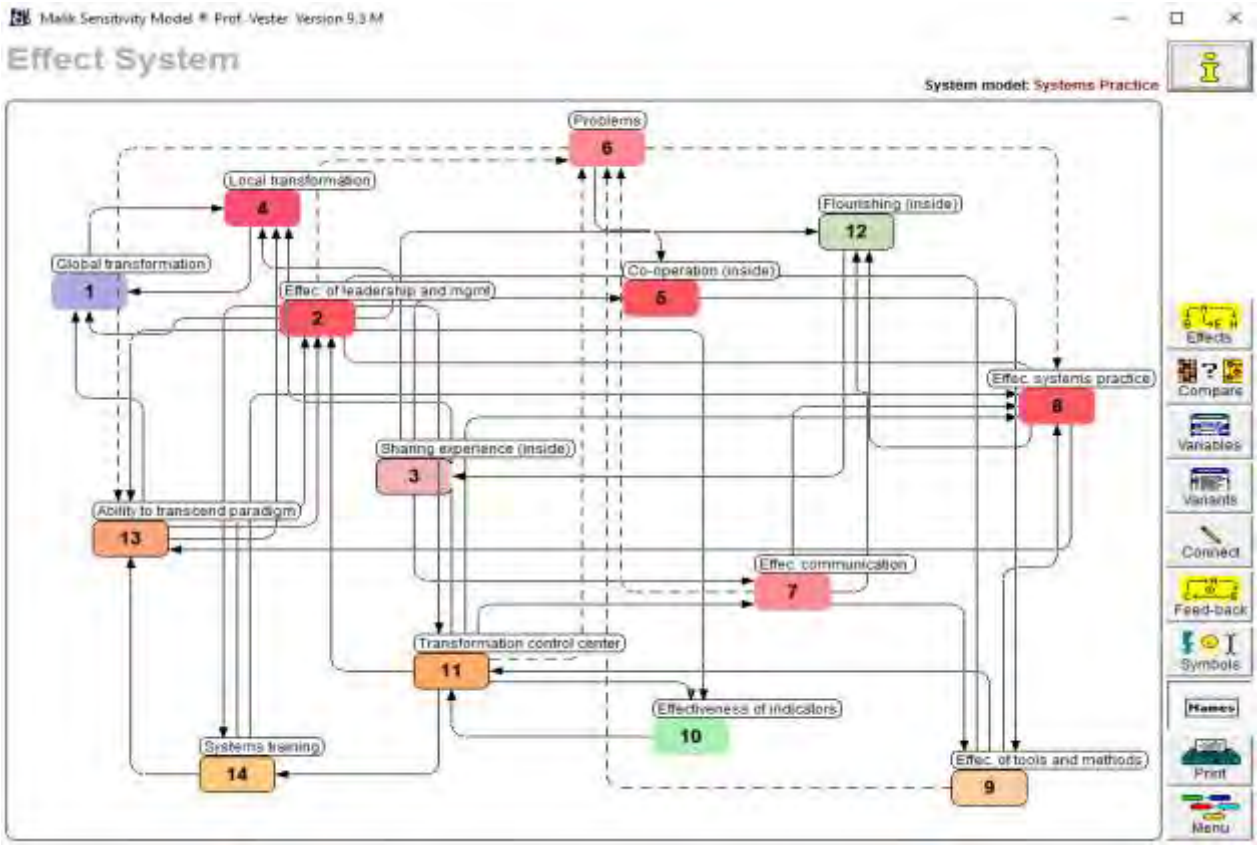


Figure 1: a causal loop diagram of the key variables of Systems Practice

Photo 1: Systems Practice Team

Systems Practice - the Art of Connected Thinking

- **Olaf Brugman**

(individual contributed paper)

The IFSR Conversation 2018 on Systems Science was the first I participated in. It had proven to be an almost priceless opportunity to converse and work for a week with fellow-systems practitioners and to discuss, define and elaborate solutions for challenges in our societies. We worked on Systems Practice: how can we equip system practitioners with the collective system science skills to observe, understand and steer complex systems. We focused on social systems: organizations and networks of institutions, organizations and people: how do we define the purposes of such systems, how do we model them, how do we understand them and develop solutions? And more importantly even: how do we promote that we, systems practitioners, learn to further apply our skills, and how do we promote that complex systems have those skills available to their better functioning? In other words, we worked on both the professional and the systems level.

We were object and subject at the same time. We were observers and the observed. We were a dynamic, forming, learning, and intervening system at the same time. We derived our learning from public health, security, problem solving methods, deep reflection, and also from over 160 years of combined professional experience. And we applied our knowledge back to it.

Of the group of seven fellow-system practitioners in our working group, I already knew three of them and have had the pleasure to work with them before. This helped us as a group to get a head start in our proceedings. However, getting in touch with three new colleagues added new perspectives and options to the group, which I felt was very beneficial to all of us. It was striking how entering in conversations with well-intended colleagues whom I had not had the pleasure to work with before always leads to different understanding of systems, and new views on making them function better. Even more than expected.

The methods at least of the group members were familiar with were management cybernetics in the tradition of Stafford Beer, Fredmund Malik and others. And also with management cybernetics learning and problem solving methods based on Systems Practice for Everyone (Ockie Bosch, Nam Nguyen, Nguyen Van Thanh). We used these methods to formulate our leading questions, to model the complex systems dynamics and find solutions. What struck me exceptionally was the insight, from five days of conversations, that systems function is an outcome of a whole set of different factors: training and educating professionals, leadership, technology, health etc. And also how connected several aspects of our societies are - economy, environment, social relationships, climate, health, innovation, well-being, public security.

The conversations and group work led to some new and surprising insights. We were able to go beyond the usual training and educational approach visualizing how to enable professionals to develop their skills. Our methods led us to see that we can also look at how certain skills and qualities are available in the system, even if they are not present in each and every individual, such as monitoring, capacity increasing systems' responsiveness, and the interconnecting between economic, environmental and social factors all influence each other, representing both challenges and leverage points for solutions. Also, it became clear how difficult it is to arrive at new knowledge: complex social systems tend to reinforce around their current homeostats: governance structures, power structures, personal roles and individuals all work to maintain the status quo. Leaders and those in power who 'see' are not always able to 'speak' since the system may relentlessly fall unto them in an attempt to preserve the system.

Interactions with other groups or others we had relatively few, mainly because we as a group had several activities in the evening, and also since I had to take care of ongoing business concerns outside the Conversation hours. Therefore the opportunities for interaction were rather limited, or at least more than I had wanted. That was a missed opportunity, but it also enabled more in-depth learning on our working group's main theme.

All in all, the systems practice week in Linz, organized by the International Federation for the Systems Sciences (IFSR) was extremely rich and insightful, inspiring, and it deepened experiences that enhanced my skills as a systems practitioner. I am grateful to the event organizers and hosts, my working group's members and coordinators, the IFSR and also the wider group of the IFSR Conversations in Linz.

Team 2. What is Systems Science?

Gary R Smith and Jennifer Makar

Gary R Smith (UK)
Gary Metcalf (US)
George Mobus (US)
Hillary Sillitto (UK)
Jennifer Makar (CA)
Swami Natarajan (UK/IN)

Why this conversation?

Multiple perspectives, patterns in works of thought and practice from diverse sources and backgrounds indicated the potential of an emerging coherence for system science. The motivation for the conversation was to determine if these various threads could somehow be woven together into a more integrated understanding, and to make progress towards the unification of systems science as a coherent systematic enterprise. In the preparation for the conversation, we asked the question, 'what is system science' in two round tables, one via video conference and another at the INCOSE International Workshop (Jan. 20-23, 2018 in Jacksonville, FL.) Currently, systems science is analogous to where chemistry was before the Periodic Table of the elements: many phenomena have been described, many of them understood as individual concepts and theories, but this knowledge is not yet integrated around a single foundational structure. We have developed and applied some very effective systemic methodologies (e.g. SSM, SD, VSM, architectural frameworks and others) in several fields like systems engineering (INCOSE), OR, OD, IE, and research. But without a unifying framework that everyone can refer to for understanding and communication, our ability to teach, develop coherently and practice system science is hindered. Indeed, our credibility suffers in front of our stakeholders and we lack sufficient coherence to address the global systemic issues confronting humankind and our future on this planet..

The essential journey of the conversation

On the first day of the conversation we passionately, exhaustively, thoroughly, interrogated the situation of system science from many perspectives. A set of questions arose that we wanted to try and to answer:

- What is Systems Science?
- How can we make a system science that is useful (for doing stuff and learning stuff)?
- Is system science a meta science?
- What are the questions that system science has to answer?
- How do we recognize systems and why?
- What do we know about different types of systems and their "pathologies?"
- How do we choose appropriate system types to solve a problem?
- What do we know and need to know about transforming systems?
- Can we really define a systems science that is applicable to everything?
- How can we organize the body of knowledge of system science?

- What is system stuff and how can this be organized?
- How can we develop the body of knowledge of system science?
- What tools can enable our systems science practice?
- What explanations and observations about the nature of the universe emerge?
- Can system science help to resolve the semantic mismatch/confusion/ambiguity between what is real and what we think is real in our models?

Can we use system science to get to grips with uncertainty and the fundamental limits to observational accuracy and precision?

How can we know that our models are sufficiently complete?

On the second day, after letting our subconscious mull over the questions, we started off the day with each of the team describing visions for what system science might look like.

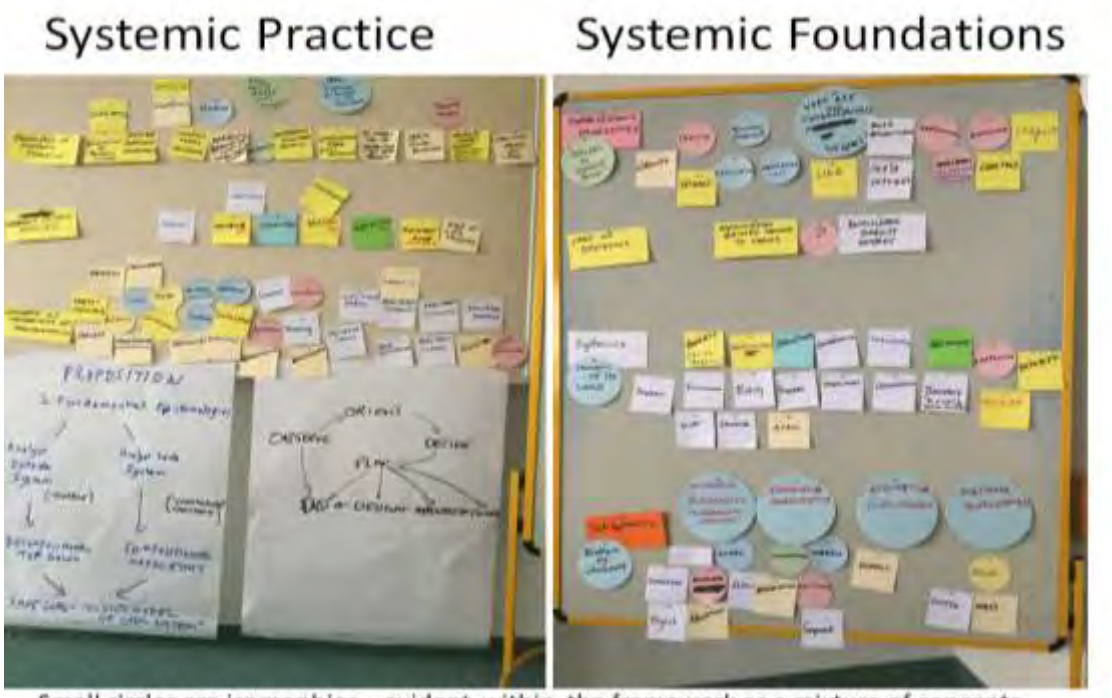
What emerged, using the analogy with chemistry, was a recognition that the current systems science literature in most cases does not clearly distinguish between the fundamental ingredients of all systems (think electrons, protons and neutrons), properties of all systems (think properties of atoms and elements due to the electron orbitals) and properties that can be synthesized with combinations of different "elemental types" of system-think compounds, crystals, alloys, etc. Most Systems Science literature also does not clearly distinguish between "how people perceive and interact with systems" i.e. systemic practice, and the fundamental "properties of systems in the natural world" i.e. systemic foundations. (Robert Rosen's book 'Anticipatory System's is a notable exception.) We thus envisaged the possibility to organize system science knowledge within the following structure.

As we considered the task of allocating system concepts to the left or right side, the question which then quickly arose was "how do you know what is real and what is simply how we see the world?", then following this, "does it really matter as long as it is useful?". We spent quite some time thinking about these questions and many others (we had moved from structuring/organizing activities and re-entered the philosophical phase of our process).

Revisiting the definition of science helped us to escape this philosophical dilemma - "Science is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe". So as we attempted to systematically determine how we would logically decide where to tentatively place system concepts and knowledge we began to conceive of thought experiments to help us. We used and adapted these 'emergent rules of placement' through the experience of allocation. It was a mentally very challenging and exhausting task but also very thought provoking as it brought to light the variety of ways (not immediately obvious), that we viewed the world, influenced by the diversity in our scientific, professional and cultural backgrounds.

As a source of material for experimentation using the framework, we were aware that the "Active and Healthy Aging" Linz team was using system isomorphisms in their big picture conceptualization, so we borrowed their board for a while and noted down all of the isomorphism they had used. We placed these alongside other concepts

and theories of systemic knowledge in the emerging framework.



Small circles are isomophies – evident within the framework as a mixture of concepts

Our intent was not to be exhaustive (or with complete consensus due to time) but to see if existing systems science knowledge could usefully be organized in this sort of structure. We concluded that it could, and that such a structure offers promise in accommodating the wealth of knowledge and viewpoints found in the system science community. Also, using the notion that "Systemness" might be a fundamental organizing principle of nature, we theorized that a system is a persistent region of low entropy (= organisation) in physical or conceptual space-time. Systemness, being the phenomenon that allows regions of organisation in the material world to exist in a universe that is cooling.

Development work continues with a candidate integrative framework and of a stakeholder map of systems people, research and development initiatives and organizations, these will progressively be opened up to the system science community for contribution, utilization and testing. If we are to bring about a recognized, respected and practiced system science then we will need to bring the community together as a systematic enterprise to build and organize our systems knowledge in the form of testable explanations and predictions about the universe.

Team 3: Active and Healthy Aging

Gerhard Chroust and Shankar Sankaran

Pamela Buckle (USA)
Gerhard Chroust (AT) [co-leader]
Allena Leonard (CA)
Shankar Sankaran (AU) [co-leader]
Jennifer Wilby (UK)

At the 61st ISSS Meeting (Vienna, 2018) a workshop was held by Gerhard Chroust and Shankar Sankaran to discuss how systems scientists and thinkers can help to Strengthen the Resilience of Ageing Societies. The reason behind this call was the realization that Europe and several developed nations are ageing, due to higher life expectancy accompanied by a decreasing birth rate. It was estimated that in 2060, 30% of the population in the EU would be older than 65 years. Human worry, suffering, and grief caused by old age would become a concern for everybody. This needed increased attention because the physical and mental health of a growing number of persons is or seemingly affected. Strengthening the resilience of seniors was recognized as necessary but posed a complex interdisciplinary challenge. The question raised at the workshop was 'Can we do a better job of anticipating, understanding systemically, and mitigating the consequences of ageing?' There was a lively discussion and it was suggested that the issue of systemic issues arising for ageing affecting several countries in the world (especially developing countries) could be a topic for IFSR Conversations in 2018

A call for participation was made and received good response. Five prominent systems researchers joined the conversation held between 8th to 13th April at St. Magdalena in Linz and brought a variety of views related to an ageing society from across the world under a topic titled 'Active and Healthy Aging (AHA)'.

The AHA team initially discussed two possible approaches to gather all the concerns of the members of the team related to ageing– rich pictures and brain storming. Brainstorming was selected as the approach and 101 issues were gathered and clustered under the following nine broad themes:

1. Culture and Social Norms (Integration, Separation …)
2. Transiting (what age is 'aged'?)
3. Risk and Opportunity (vulnerability, time for volunteering)
4. Loss & Resilience (loss of hearing, memory ,,,)
5. Internal – External (meaning of life, society..,)
6. Caring Relationships (family and friends, intergenerational groups)
7. Assisted Living (home-help, seniors' home …)
8. Degree of Autonomy (ability to choose, …)
9. Governance and Policy (models of care, finances, etc.)

A different way of analyzing of the issues was also carried out using 'system isomporphies' which resulted in the following clusters:

1. Hierarchy and Complexity (Structure/Form)
2. Mechanisms of the system (Systems flow and processes
3. Information (Information flows)
4. Defining the system (Boundary)
5. Maintenance and viability of the system (System maintenance)
6. Response to disturbances (System evolution)

A Viable Systems Model (VSM) was selected as a framework for the analysis, thanks to Allena's presence as an expert. The VSM analysis resulted is trying to understand what a typical ageing person should consider enjoying an active and healthy life. The following questions were arrived at as key decisions to be made that will result in a holistic plan for life:

1. Where will I live?
2. What is my relationship to my family?
3. Who are my friends/companions?
4. How will I occupy myself?
5. What services do/will I need?
6. What will I do for fun?
7. How will I live a full life?
8. How will I pay for it all?
9. Have I got an 'end of life' plan?
10. What will be my legacy?

It was then decided that the team will develop a plan using VSM for a typical person who is aging. An aging person in a town in Austria was proposed. Gerhard helped in developing a profile of Wilma whose life was then used to explore using VSM. The others added to the profile to build a realistic and comprehensive profile of a typical ageing person in a developed country.

As a preparation for an analysis using VSM isomporphies were used to discuss the Wilma System including: how we can define the system, identify information issues; explore maintenance/viability of the system; mechanisms of the system; responses to disturbance; and hierarchy/complexity.

The following five levels of VSM were then used to analyze the Wilma system:

Level 5 (Identity and coherence)
Level 4 (Anticipating the future environment)
Level 3 (Managing the here and now)
Level 3* (Periodic audit)
Level 2 (Coordination)
Level 1 (Operations connected to the present environment)

The effect of algedonic signals that can cause perturbation to the system were also explored.

Following the analysis using VSM the team explored some homeostats linked to and observed in the Wilma systems. A causal loop diagram was also built together to explore how we can apply for a research grant to work together addressing systems issues in aging.

Gerhard observed the great difference between USA and Austria, which is due to a much better and comprehensive health care system in Austria. This guarantees a much safer and more reliable outlook to old age.

The conversations ended with a discussion on what the team, along with other systems researchers, could do further to continue addressing systemic aging. Following activities were identified to have potential for further collaboration:

1. Designing interdisciplinary research projects
2. Applying for research grants
3. Writing articles and opinion pieces
4. Exploring consulting opportunities
5. Making presentations
6. Advocacy

The team had very enjoyable and productive discussions weaving together its professional expertise, bringing experiences from various cultures, sharing own experiences fears and hopes about aging from personal experiences as well as experiences of loved ones. This resulted in an enjoyable as well as compelling conversation.

A follow up workshop was planned at the 62nd ISSS Meeting held at Corvallis, Portland in 2018 which was also completed and a community of inquiry into aging has been set up.

Team 4: Data Driven Systems Engineering Approaches

Ed Carroll

Edward Carroll (US)
Dana Grisham (US)
William Schindel (US)
Chris Schreiber (US)
Nancy Hayden (US)
Sharon Trauth (US)
Frank Salvatore (US)
Eliot Rich (US)
Louis Klein, (DE)

In April, 2018, a small group of systems engineers, scientists, and researchers assembled at the 19th International Federation for Systems Research (IFSR) Conversation in Linz, Austria, to use systems analysis methods to model a Systems Engineering approach that would optimize modern model-based engineering methods and tools.

An MBE Manifesto

One result of that Conversation was a manifesto on model-based engineering. The purpose of the manifesto is to summarize and make explicit key values and principles motivating the transformation to model-based engineering (MBE). While we started with the concept of model-based systems engineering, we now feel that the values and principles in the manifesto are relevant to all engineering disciplines. We will present the manifesto at the upcoming 2018 INCOSE International Symposium, with the specific intent to seek feedback and input from across the INCOSE community.

This manifesto is the output from the sessions that discussed Data Driven Systems Engineering Approaches at the 2018 Conversation.

Data Driven Systems Engineering

This Conversation session explored the application of analytic and modeling techniques to the Systems Engineering problem space. Systems Sciences can be described as the application of a systematic approach (systems thinking) that includes tools and techniques from systems analysis, data analysis, computer science, efficiency/ecology, human factors, systems dynamics, and complexity theory towards topics in nature, society, health, and engineering. The application of systems science toward engineering the total system (Systems Engineering), particularly the analysis of high fidelity data to drive engineering decisions in complex systems, systems of systems, and massively complicated systems is of particular interest. Research shows that many of the systems we take for granted, such as automobiles and airplanes, and the infrastructures that support these systems (system of systems) are becoming increasingly more complicated. The automobile of today contains over

a million lines of code (LOC); an airplane can contain over 10 million LOC. At the same time, economic and political pressures are being applied to drive down cost and reduce schedules. Systems analysis and data analytic methods are being used effectively in many business use cases. Systems Engineering is held responsible for the understanding and control of complex systems.

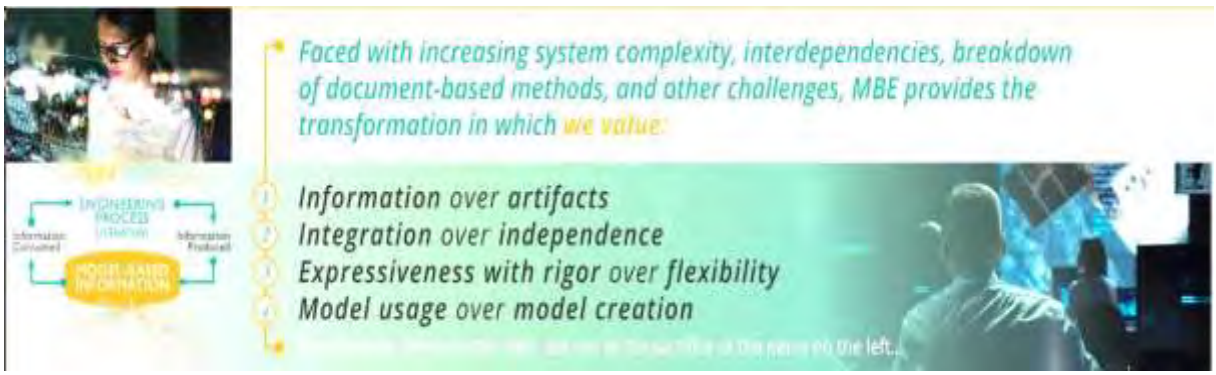
Systems Engineering as an engineering discipline is based on assumptions from supporting disciplines such as systems analysis, systems science, and systems thinking. Therefore, it should be natural to think of Systems Engineering as being data driven. However, experience finds the contrary. Engineering programs (Products, technology, processes, and people organization) are often based on the processes, organization, technology and product plans of previous programs, whether (or not) those past programs were successful. And little consideration is given to whether those past program processes, tools, technology, people, or organizations are optimally suited for the new product or processes. If Systems Engineering is a true engineering discipline, then we should use our Systems Engineering methods to design our engineering programs. That is, to use systems analysis and modeling methods to systematically model and optimize the program approach. Agenda:

In the months prior to the Conversation, the team collaborated extensively on the agenda. The final agenda that emerged encouraged conversation flowing through the S*Space paradigm, starting with the system model of the target system (S_1), working upward toward the model of life cycle domain system – the system that manages the target system model (S_2), and then on to the model of system of innovation – the system that evolves the life cycle domain system (S_3).

Subtopics included:
Model Credibility:
SE knowledge Representation (Ontology):
Constraint Definition:
What is the Smallest Model?:
Using Data:
Model Patterns, or Pattern-based Systems Engineering (PBSE):
Model Integration/Continuous Integration:
Configuration Management of Models:
Modeling in Support of an Agile Method:
Culture Change - A Model-based Manifesto:

We successfully culminated this week-long conversation with a Value Statement and Model-based Engineering (MBE) Manifesto. The value statement is below. More details on the MBE Manifesto will appear in the final report.

We have nailed the full manifesto (values plus principles) to the front doors at the MORS 86th Symposium, the INCOSE IS 2018, and the NDIA/SE 2018 Conference in Tampa, FL. We sincerely hope to start a conversation, receive feedback and input to the manifesto. While we recognize that not everyone will share our views or appreciate the nuance of our wording, our hope is that the MBE manifesto will embody our full collective values and principles on where the engineering industry is moving forward into the next decades.



News from IFSR Member Societies

ISSS Conference 2018

Javier Calvo-Amodio

The 62nd Annual Conference of the ISSS was held at Oregon State University (OSU) in Corvallis, Oregon, from July 23rd to the 27th 2018. The School of Mechanical, Industrial, and Manufacturing Engineering (MIME) hosted the conference. The conference theme was "Innovation and Optimization in Nature and Design" , and brought together systems engineers, systems scientists, and systems thinkers to present and reflect on new discoveries and applications of systems principles in science, engineering, management, and service. As usual, the mornings were devoted to plenary presentations divided into daily themes, the afternoons to parallel streams of workshops and meetings of the ISSS' s Special Integration Groups (SIGs).

Monday morning was devoted to reflections on the systems landscape from multiple perspectives. David Rousseau' s Presidential Address outlined a vision for collaboration and integration across the fields of general systems science, complexity science, the specialized systems disciplines, and systems engineering. He argued that such convergence is important for meeting the technical, social, and ecological challenges arising from the emerging fourth industrial revolution. This was followed by Garry Roedler (President of the International Council on Systems Engineering - INCOSE) discussing the systems science needs for supporting systems engineering of the future. After this Peter Roolf and Wayne Wakeland presented an overview of the Systems Science PhD Program at Portland State University, which, after nearly five decades, is the longest running PhD program in the history of the systems sciences.

Tuesday morning considered systems principles in engineering and practice, with presentations by Michael Watson (NASA Marshal Space Flight Center) on the need and principles for elegance in systems design and systems engineering. This was followed by a presentation Charles (Chuck) Keating (Old Dominion University) on governance in complex system acquisition and the significance of systems principles and laws in preventing system pathologies. After this, Javier Calvo-Amodio (Oregon State University) discussed how systems principles can be applied to the development of team culture in the context of rapid technological change. The morning session concluded with William (Bill) Schindel (ICTT System Sciences) take on how can we use Hamilton's Principle as the foundational principle of the systems phenomenon and the implication that systems science and systems engineering are more fundamental disciplines than specialized scientific or engineering disciplines.

On Wednesday the focus was on systems principles in society and culture, with presentations by Tom

McDermott (Stevens Institute) on how aesthetic principles from the arts can be applied to improve the systems thinking skills of systems architects. After this, John Vodonick (Two Ravens Consulting) discussed the relevance of systems principles in ethics. The morning session concluded with a discussion by Debora Hammond on systems principles role in cultural change and social transformation, and how understanding of such principles can help us work towards a more equitable society.

Thursday's theme was systems principles in the sciences, with presentations by Martin Zwick (Portland State University) on Reconstructability Analysis and its uses, e.g. in managing the stability of self-organized teams. This was followed by a presentation by Linda Holbeche (Holbeche Partnership) on systems principles for the design of organizations that are both agile and resilient. After that, Rika Preiser (University of Stellenbosch) how organizing principles can be used for classifying the features, mechanisms, and behaviors of complex adaptive systems. The morning session concluded with a discussion by Peter Niewiarowski (University of Akron) on contemporary ways in which the study of living systems inspire solutions to problems in the human built environment.

The afternoon sessions Monday to Thursday were devoted to SIG meetings and workshops. Across 17 SIG meetings over a hundred papers were presented, complimented by 13 workshops. In addition, attendees were invited to fill out a comprehensive survey about their views on the status, priorities, and potential of systems science research. On Friday morning, there was a plenary workshop to bring together the inputs from the presentations, workshops and the survey, as an activity towards developing a research agenda and research teams for advancing the systems sciences. The results of this workshop is still being analyzed and a follow-up survey is in planning.

The conference was well-attended, and this year was notable for the large number (about 25%) of attendees who were attending an ISSS conference for the first time. The conference was held in the OSU Alumni Centre: the plenary hall and the meeting rooms of the parallel session all on the ground floor of a single building. This contributed much to making the conference an enjoyable social event in addition to its technical aspect. This was complimented by a convivial banquet held on the Thursday evening at the Tyee Winery nearby Oregon State University. This was also the occasion where the ISSS awards were announced. This year's winners are:

Sage McKenzie Kittelman, whose paper " A Systems Analysis of Communication: Defining The Nature of and Principles for Communication Within Human Activity Systems" earned the Sir Geoffrey Vickers Memorial Award, given for best student contribution to our understanding of Appreciative Systems;
Maria Alejandra Torres-Cuello, her paper "Developing a Systemic Program Evaluation Methodology: A Critical Systems Perspective" earned the Anatol Rapaport Memorial Award, given for best student contribution to quantitative systems approaches;
Rika Preiser, whose plenary presentation "Defining Six Key Organizing Principles for a Typology of General Complex Adaptive System Features and Dynamics" earned the MDPI Systems Journal Award for Most Innovative Contribution to ISSS 2018.

Our heartfelt congratulations to all these recipients, and our warm thanks to everyone who contributed to make the conference such a memorable and successful event! The conference was greatly enjoyed by everyone present. Next year's conference will again be held at OSU in Corvallis, June 28th to July 2nd, 2019. The theme, under the Presidency of Peter Tuddenham, will be: " Nature's Enduring Patterns: A Path to Systems Literacy" . We hope to see you there!

SEA AND LIFE

The *Grupo Mar*

Ricardo Barrera[1, 4] Patricia De Vreese[5] Eva Sarka[1]
Javier Valladares[2, 3]

The present situation of the sea needs to be considered in a systemic view, connecting not only the environmental aspects with each other, but also relating those with economic and political decisions. There is a need for a world model, and to create consciousness in the population about the importance of the sea; therefore, the importance of including these topics into the educational curriculum, starting from the youngest of the society.

The *Grupo Mar* (in English "Sea Group") is a research, development and action association, integrated by academics and professionals interested in a systemic approach to the topics related with the sea and its coasts.

It is composed by the following institutions:

- Instituto Tecnológico de Buenos Aires (ITBA)
- Grupo de Estudio de Sistemas Integrados (GESI)
- Colegio Atlántico del Sur de Mar del Plata (CADS)
- Fundación EcoConciencia
- Universidad Tecnológica Nacional, Regional La Plata (UTN-FRLP)
- Academia del Mar (ACMAR)
- Universidad Nacional de la Patagonia San Juan Bosco, Facultad de Ciencias Económicas (FCE-UNPSJB)

On June 8th, 2018 – World Oceans Day – the *Grupo Mar* presented a participatory project at the Puerto Madryn Regional Headquarters of the Universidad Nacional de la Patagonia, San Juan Bosco (UNPSJB), the host institution of the event.

With focus on the Patagonian coastal communities, the presentation was developed through an interdisciplinary panel and associated conferences. By using this approach, the presentation started showing several aspects of the sea issues, followed by a substantial exchange of ideas conducted to mobilize the interest and sensitivity of the participants, with the goal of reaching through them, a broader community. The purpose was achieved thanks to the participant's (mostly professionals, academics and students) involvement and their request to provide continuity to the discussions through a dialogue forum such as the one described in this article.

Keywords: Sea, systemic, biosphere, cooperation, youth

The full report can be accessed on IFSR' web site (ifsr.org) at
http://www.ifsr.org/index.php/sea-and-life-a-latgin-amerrican-initiative/

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