



Universidad Nacional Autónoma de México
 Centro de Investigaciones Interdisciplinarias en Ciencias y Humanidades
 Universidad Autónoma de Yucatán
 Research Committee Sociocybernetics RC-51
 International Sociological Association

THE SOCIOCYBERNETICS OF SOCIAL SYSTEMS AND SOCIAL NETWORKS

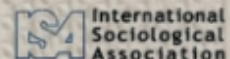
12th Conference of Sociocybernetics of RC51

Chair:
Margarita Maass | mmaass@labcomplex2.net
Carmen Castillo | ccastillo@uady.mx

CENTRO CULTURAL UNIVERSITARIO
 Universidad Autónoma de Yucatán
 Mérida, Yucatán (México)
 24-28 June 2013



Research Committee 51
 on Sociocybernetics
 ISA International Sociological Association



Conference Scope

The ISA Research Committee 51 on Sociocybernetics (RC51) is an international group that aims to promote the development of sociocybernetic theory and research within the social sciences. Sociocybernetics is broadly defined here as applications within the social sciences of first- and second-order cybernetics, general systems theory and the various combinations and variations of these that can be subsumed under the term “the emerging science of complexity”. Members of the group study all aspects of social dynamics and social interaction with particular attention to the observer-dependence of knowledge and the reflective, self-referential and self-organizing capacities of social systems and social networks.

Following our previous conference topics related to complexity, social action and complex social systems, the 12th RC51 2013 Conference addressed “***The sociocybernetics of social systems and social networks***”, in fields of complex social phenomena such as education, economy, interdisciplinary research, international relations, management, migration, new social media communication, scientific production, sustainability, social movements and systemic violence. The conference invited the submission of paper proposals that:

- report the empirical findings of research studies that apply sociocybernetics (both concepts and/or methodologies).
- address the methodological and ethical issues associated with the creation and maintenance of research networks and with the reflective, self-referential aspects of research in sociocybernetics.
- address theoretical and conceptual issues concerning how to effectively characterize social systems, social networks and the interactions of social actors.

Participation:

43 papers were submitted following the call for papers. The Head of the Abstracts Committee, Patricia Almaguer-Kalixto: (patricia@labcomplex2.net), along with the Chair of the Local Organizing Committee, Margarita Maass: (mmaass@labcomplex2.net), and the RC51 Secretary Czeslaw Mesjasz (mesjaszc@uek.krakow.pl) organized blind reviewing by the International Scientific Committee. Feedback was sent to the participants.

A selection of 30 were included in the final program, which also included 3 workshops and an opening ceremony with a guest lecture. Board and business meetings also took place. Publication of selected contributions is planned as an outcome of the Conference. Two journals have offered to accept papers: the RC51 official journal, “Journal of Sociocybernetics”, and the Journal of Applied Research and Technology (JART), which will publish a special issue devoted to conference papers considered to be of interest to the journal’s readership.

The event was held in at the “Centro Cultural Universitario” of the Universidad Autónoma de Yucatán in Calle 60 No. 491-A x 57, Centro Histórico (City Centre), Mérida City, Yucatán (México). The event provided an excellent opportunity to visit Mérida, Yucatan and its contemporary and ancient Mexican cultural sites of interest. 4 such excursions took place.

“The Sociocybernetics of Social Systems and Social Networks”
 12th International RC51 Conference of Sociocybernetics
 24th to 28 of June 2013
 UNIVERSIDAD AUTÓNOMA DE YUCATÁN MÉRIDA
 Calle 60 No. 491-A por 57 (Centro Histórico)
 Mérida, Yucatán, México C.P. 97000



Research Committee 51
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CONFERENCE PROGRAMME

MONDAY JUNE 24

8:00 – 9:00

Registration

9:00 – 9:30

OPENING CEREMONY

- DRA. GENNY MERCEDES NEGROE SIERRA, Director of Faculty of Anthropological Sciences, Universidad Autónoma de Yucatán (UADY).
- DRA. EVA BUCHINGER, President of the ISA Research Committee 51 on Sociocybernetics.
- DRA. CARMEN CASTILLO, Local Organizing Committee.
- DRA. PATRICIA E. ALMAGUER KALIXTO, Abstract Committee Coordinator.
- DRA. MARGARITA MAASS, (Chair) Vice-President of the ISA Research Committee 51 on Sociocybernetics (CEIICH, UNAM).

9:30– 11:00

OPENING LECTURE:

Trans-disciplinary research of socio-ecosystems at the International Long Term Ecological Research Network (ILTER)

Dr. Manuel Maass Moreno, Centro de Investigaciones en Ecosistemas (CIECO) Universidad Nacional Autónoma de México

11:00 – 12:30

BRUNCH

Session 1

Chair: Eva Buchinger

12:30 – 13:10

1 From Cybernetics of Cybernetics to a Triadic Social Network Model

José A. Amozurrutia y Campos (CEIICH – UNAM / MEXICO)

13:10 – 13:50

2 Moral Populism in the Age of Systemic Crisis: A Case Study According to Luhmann's Social Systems Theory

Prof. Toru Takahashi (Chuo University/ JAPAN)

13:50 – 14:30

3 Management of Intentionality, a fractal 2nd order cyber-technology in networks of systems of intentional actions

Henrique P. Santos, Joaquim B. Gouveia, Ana S. Cardoso (Centro de Estudos de Recursos Naturais Ambiente e Sociedade, ESAC / Universidade de Aveiro / PORTUGAL)

TUESDAY 25th of JUNE

Session 2

Chair: Bernard Scott

- 8:30 – 9:10 4 **The sociocybernetics of social systems and social networks**
Michael Paetau (Center for Sociocybernetics Studies Bonn / GERMANY)
- 9:10 – 9:50 5 **Cybercultu@, Sociocybernetics and networks: A proposal for setting up a network of communities Emerging Interdisciplinary Research**
Margarita Maass (CEIIICH - Universidad Nacional Autónoma de México /MEXICO)
- 9:50 – 10:30 6 **Managing complex organizations - Challenges and Proposals**
Bernd R. Hornung (University Hospital Giessen and Marburg GmbH / GERMANY)
- 10:30 – 11:10 7 **Building knowledge from interdisciplinary work and communication networks**
Ana Lucía Recaman Mejía (Universidad La Salle, Cuernavaca / MEXICO)

11:10 – 12:30 BRUNCH

Session 3

Chair: Fabio Giglietto

- 12:30 – 13:10 8 **Innovation in social systems theory**
Eva Buchinger (AIT Austrian Institute of Technology / AUSTRIA)
- 13:10 – 13:50 9 **Sustainable Technology Assessment and Sustainable Scenarios of Techno Social Phenomena**
Michiko Amemiya-Ramírez (UNAM / MEXICO)
- 13:50 – 14:30 10 **Doing Justice: Humans, Society, Life, Evolution. The price to be paid**
Helmut Loeckenhoff (Independent Researcher / GERMANY)
- 15:10 – 16:30 **LUNCH**
- 16:30 – 18:30 Workshop 1 Introducing Sociocybernetics
(By Bernard Scott, Center for Sociocybernetics Studies, Germany/UK)
- 19:00 – 20:00 Board Meeting

WEDNESDAY 26th of JUNE

Session4

Chair: Juan Carlos Barrón-Pastor

- 8:30 – 9:10 11 **Reflections on the Sociocybernetics of Social Networks**
Bernard Scott (Center for Sociocybernetics Research, Bonn GERMANY /UK)
- 9:10 – 9:50 12 **The Paradox of Social Ties after the ICT Revolution: A Second-Order Observation**
Saburo Akahori (Tokyo Woman's Christian University / JAPAN)
- 9:50 – 10:30 13 **Can urban society self-organize its government? The case of Teotihuacan**
Tom Froese, Linda Manzanilla and Carlos Gershenson (UNAM/Centro de Ciencias de la Complejidad / MEXICO)
- 10:30 – 11:10 14 **Social Experiments and Comparison of Disparate**
Ihar Miklashevich (Belarusian National Technical University, BELARUS)

11:10 – 12:30 BRUNCH

Session 5 Chair: Chaime Marcuello

- 12:30 – 13:10 15 **A systematic approach of death and its scope in contemporary society**
David Karminsky (Universidad Anahuac de Oaxaca / MEXICO)
- 13:10 – 13:50 16 **“Litany scathing”: Oaxaca Political System, repression and associates tendencies.**
Arturo Augusto Cano Cabrera (Center for the Study of Religion and Culture AC / MEXICO)
- 15:10 - 16:30 LUNCH
- 16:30 – 18:30 Workshop 2 (in Spanish)
Sociocibernética y sistemas sociales. Dr. Felipe Lara-Rosano (UNAM, Mexico)

THURSDAY 27th of JUNE

Session 6 Chair: Michael Pateau

- 8:30 – 9:10 17 **Semantic Cartographies for Social Representations in B-learning activities: A sociocybernetic perspective.**
José A. Amozurrutia, Juan Carlos Pérez (LabCOMplex (CEIICH, UNAM) / Universidad del Altiplano / MEXICO)
- 9:10 – 9:50 18 **A Sociocybernetic framework for meaning construction**
Felipe Lara-Rosano and María Guadalupe Velázquez-Guzmán. (UNAM / U. Pedagógica Nacional /MEXICO)
- 9:50 – 10:30 19 **Sociocybernetic approach to sustainability: collaborative planning, sport fishing and tourism.**
Michiko Amemiya-Ramírez, María Fernanda Contreras del Valle, Germán Ponce Díaz, Daniel Luch, Luis A. Bojórquez-Tapia /(MEXICO)
- 10:30 – 11:10 20 **The complexity of meanings of rural-urban relocation of high dam migrants in time: Case study of keban dam migrants in Elazığ, Turkey**
Ilknur ONER (Sociology Department, Elazığ, TURKEY)

11:10 – 12:30 BRUNCH

Session 7 Chair: Patricia E. Almaguer-Kalixto

- 12:30 – 13:10 21 **Regional Sustainability Model. A Networking Building Tool for the Promotion of Sociocybernetics** Luciano Gallón (Universidad Pontificia Bolivariana / COLOMBIA)
- 13:10 – 13:50 22 **Contributions of cultural diversity in land use planning to facilitate adaptation.**
Lilina Racamán (Universidad del Cauca / COLOMBIA)

15:10 - 16:30	LUNCH
16:30 – 18:30	Workshop 3. Social Systems and Social networks: from Simulation to Observation (Dr. Fabio Giglietto Urbino Bo University, Italy)
19:00 – 20:30	Business Meeting

FRIDAY 28th of JUNE

Session8

Chair: **Margarita Maass Moreno**

8:30 – 9:10	24	Complex systems approach and critical thinking in the construction of the research project about the youth in a “marginalized” community in Merida, Yucatan, Mexico Ksenia Sidorova, Roxana Quiroz Carranza and Astrid Karina Rivero Pérez (UADY / MEXICO)
9:10 – 9:50	25	Participatory network analysis as tool for enhanced reflexivity Patricia E. Almaguer Kalixto/ Pedro J. Escriche Bueno (Centro de Estudios Rurales y de Agricultura Internacional CERAI / Universidad de Zaragoza / SPAIN)
9:50 – 10:30	26	"Back to Citizens the National Sovereignty: The Networked 5 Stars Movement in Italy Aida Huerta Barrientos (UNAM / MEXICO)
10:30 – 11:10	27	Open systems, open data, open government: technology and transparency (Chaime Marcuello / Universidad de Zaragoza, SPAIN)

11:10 – 12:30 BRUNCH

Session9

Chair: **José A. Amozurrutia y Campos**

12:30 – 13:10	28	Second screen and Political Talk-Shows: Measuring and Understanding the Italian Participatory Coach Potato Fabio Giglietto (Department of Communication Studies, Università di Urbino Carlo Bo / ITALY)
13:10 – 13:50	29	Understanding hegemonic forms of autopoiesis and power reproduction: towards a heuristic model to explain mainstream media functioning in North America Juan Carlos Barrón Pastor (CISAN-UNAM / MEXICO)
15:10 – 19:00		VISIT / LUNCH
20:00 – 23:30		Close of Conference and Conference Dinner

ABSTRACTS OF PAPERS PRESENTED

1 From Cybernetics of Cybernetics to a Triadic Social Network Model *José A. Amozurrutia. UNAM- CEIICH-LabCOMplex MEXICO. (amoz@labcomplex.net)*

In this paper I present a Triadic Social Network Model -TSNM- as a proposal to link both macro and micro levels of interaction between social actors i.e. as institutions, groups or individuals. The integrative concept is a triadic unit of three potential instances: a potential communicative instance, a potential objetivation instance and a potential significative instance. These potentialities are derived from the resonances of Vygotski's triadic knowledge development between actors and mediators and Piaget's knowledge construction concepts. Triads are naturally connected by means of a continuously articulation of mediated communication, information and knowledge potentials between actors in continuous interactions within their proper social space and time periods. Dynamics in Triads is recursive and dialectical. One of the most important of triad forms is associated with a knowledge expert / transmitter, a computer mediator and a knowledge apprenticeship / receptor. Groups of triads associated with themes or activities constitute the networks of interest.

The TSNM was derived from a group of modules related to an Adaptive System for Social Analysis and its conception comes from a cybernetic thinking around cybernetic materials used by researchers at LabCOMplex. In the first part of the paper I explain how the TSNM was derived i.e. how do I apply cybernetics of cybernetics, and how the proposed model faces micro and macro social space and time. In the second part I describe the model itself and how it may be applied in educational problem analysis, an ongoing project in LabCOMplex.

Keywords: Network, Cybernetics, interaction.

2. Moral Populism in the Age of Systemic Crisis: A Case Study According to Luhmann's Social Systems Theory. *Toru Takahashi. Chuo University, JAPAN (ttakahashi0@gmail.com)*

In this paper, I focus on a case of populism in systemic crisis, which is caused by function systems, from the point of view of Niklas Luhmann's social systems theory. In Japanese General Election in 2005, Liberal Democratic Party leader Junichiro Koizumi set "postal service privatization" as a main and only agenda of the election. He presented himself as a "good" reformer and opponents as "bad" old-guard cronies. Mass media described the election by this schema. The moralization and dramatization worked in the context of systemic crisis.

According to Luhmann, there must be two freedoms in public opinion: freedom to choose themes of communication and freedom to express opinion. Moralization of political communication hampers these freedoms (especially latter). In democratic society, political system observes public opinion and takes in complexity of its environment. Moralized political communications hinder it.

Crisis popularizes reformation and any other reactions to crisis. Strong popularity makes it easy to talk assertively with sacred cause. In this situation, there is almost no political rivalry. But, there must be other, alternative sort of rivalry to produce information in political system. In this context, moral confrontation works.

Moral populism brings about as a reaction to systemic crisis such as lingering recession, financial crisis. There are almost no differences in principle between major political parties, so instead of political difference, moral difference works as an informational difference in election campaign. In the age of systemic crisis, moral populism is suitable to produce information for political system and mass media. This could bring another crisis: crisis of democracy. In this respect, moral populism itself is also a systemic crisis.

Keywords: populism, political system, systemic crisis.

3. Management of Intentionality, a fractal 2nd order cyber-technology in networks of systems of intentional actions *Henrique P. Santos, Universidad Nueva de Lisboa (hps@esac.pt), Joaquim B. Gouveia, Universidade de Aveiro, Portugal. (jqgouveia@ua.pt), Ana S. Cardoso, in_AGRI, Campus da ESAC (anascardoso@yahoo.com) PORTUGAL*

Nature and human intentional actions shape the world as we know it. Some of the natural phenomena are not controllable, but is it possible to manage intentional actions and to measure its performance and to correct the on-going accomplishments? If so, then success should be enabled, and all the deviations and failures corrected. In the search for an answer, a methodology was defined and a fractal technology was designed for simple and/or multilevel strategic actions, creating an evolutionary meta-system approach: the management of intentionality and of its consequences in value, in technology, in the environment, in society and on sustainability.

It applies to open systems and it allows the construction of a metaphorical 'molecule of action', which assumes quantitative characteristics, such as a precise color, polarity, weight, position, spin or momentum. Due to the pure nature of the indicators obtained from the 2nd level of complexity, it permits the comparison among isomorphic systems, within and beyond the organization, thus informing and advising the best performance of simple or complex operators. In the process, it creates an intra-, inter- and trans-matching system metrics conforming a 2nd order cyber-technology, linked and articulated through a precise logical referential activating a retroaction control mechanism. It is based on quantitative parameters, which categorize different assessment facets and perspectives of any transformation brought into the system of actions' state, from the idea to the results, from the instant to the longest time series, inducing a greater synchronization of the intentionality within and among systems of actions, modulating a systemic approach to homeostasis. The knowledge flow it generates enables the network operators to focus on system dynamics, increasing their quantitative, qualitative, semantic and graphical perception of the strategic evolution of their system of actions, therefore inducing failures correction and the adoption of intentional virtuous cycles.

Keywords: Open systems; systems of intentional actions; fractal architecture; 2nd order cybernetic technology; homeostasis; management by intentionality.

4. Systems Theory and Social Networks – an unresolvable Contradictoriness? Michael Paetau. Center for Sociocybernetics Studies, GERMANY (michael.paetau@sociocybernetics.eu)

One of the basic hypotheses of systems theoretical analyzes of modern society is the assumption of functional differentiation. But since approximately 30 years we are observing a development which provokes a change for the modalities of communication which may have consequences for social structure. In relation with the current so-called "digital revolution" an epochal change is to be expected, comparable to the invention of the letterpress during the 15th century in Europe. Generally this epochal change is paraphrased by the term "networks" (cf. Hiltz & Turoff 1978; Castells 2000). In my paper I would ask from a sociological and sociocybernetic point of view what does it mean, if we do expect a "network society"? Which kind of social structure do we expect? In which relationship to the functional differentiation the network structure will be?

Generally, new modes of communication caused by the invention of new media of dissemination effect an immense extension of the scope of communication process what Luhmann calls an overspill of communication respectively an overspill of meaning. Historically societies have created certain cultural and structural possibilities to manage this overspill and to reduce complexity. The modern society has created the functional differentiation as a typical form of social structure and a number of corresponding symbolic generalized media (money, power, truth etc.) which could solve the problem of the selective connectivity. The digital revolution has increased the overspill of communication and provoked the emergence of new communicative possibilities which cannot be integrated smoothly for a selective handling of communicative connectivity of social networks. The question is in what extend the theory of social systems can contribute to analyze first the nature of social networks and second the nature of transformation from functional differentiation to network differentiation? This question I want to discuss in my paper, using the example of the political system of society.

Keywords: Social Networks, Digital Revolution; Structural Transformation.

5. Cybercultura@, Sociocybernetics and networks: A proposal for setting up a network of communities Emerging Interdisciplinary Research. Margarita Maass Moreno, Universidad Nacional Autónoma de México (mmaass@lacomplex2.net)

How we could to strengthen the practice of interdisciplinary research from work dialogic theory and praxis? This paper presents a proposal for the creation of a Network of Communities Emerging Interdisciplinary Research. This proposal is based on networks that arises precisely the dialogue between these two axes: first the theoretical from sociocybernetics and secondly, the methodological axis from Cybercultura@. Both frameworks allow the intersection between the two axes, as a dialectical process between theory and methodology and, of course, is the space to explain the features of the Network of Communities Emerging Interdisciplinary Research as a complex system.

In the first part of the work, I will work the concepts of epistemology, as a common language between nodes on a network. Also, I will mention, the conceptual thread from three theoretical bodies that complement: Piagetian constructivism explains the general system of knowledge as a complex system, the theoretical proposition Reynoso on social networks and complexity, and the complex systems theory, which allows us to understand the previous two. In the second part, I reflect on some categories as networks (Reynoso, 2010), cognitive stimulation cybercultural processes, connectivity and collective consistency (González, Amozurrutia and Maass, 2007), equally distributed intelligence processes, second order reflection, relational thinking (Amozurrutia, 2008) as a common language between network nodes as necessarily collective processes and present to the establishment and strengthening REDCELL and for Research and Development of interdisciplinary projects. Then, I will explain the two methodological perspectives: the cybercultura @, as methodological approach to build communications systems, information and knowledge and methodology of Garcia, for interdisciplinary research. Finally, I will explain how sociocybernetics is the theoretical component linking both axes for the design and planning REDCELL,-Network Emerging Interdisciplinary Research Communities.

Keywords: Networks, research communities, sociocybernetics, cybercultura@, complex systems.

6. Managing complex organizations - Challenges and Proposals. Bernd R. Hornung. University Hospital Giessen and Marburg GmbH (GERMANY) (HornungRC51@aol.com)

Modern business organizations are complex and highly dynamic systems in a highly dynamic complex environment. This environment constitutes a network having the properties of an eco-system much more than those of a controlled and steered system. This is true for the economy in general as well as for the health care system in particular, both of which form the complex and highly dynamic environment of health care institutions like hospitals. Such organizations often move at the edge of chaos and sometimes not only at its edge []. In their operations they need to be understood not just as "systems", but also as actors at different levels [], and in many cases also as man-machine systems. This is even the case in modern maximum care hospitals which, on the one hand, are service intensive organizations, but on the other hand use extensively both medical and information technology.

In the present paper a particularly challenging type of organization, a university hospital, is taken as an example to illustrate and analyze management problems resulting from the combination of high internal complexity of such a health care organization and the high and highly dynamic complexity of the environment, the networks of the health care system and the economy at large, in which a University Hospital, e.g., is embedded. Other important environments are the legal system and the political system, the relation to which is characterized by chronic health reform in Germany.

7. Building knowledge from interdisciplinary work and communication networks. Ana Lucía Recaman Mejía, Universidad La Salle, Cuernavaca, MEXICO (alrecaman@gmail.com)

The development of interdisciplinary research, and the intersection of cybercultures and Sociocybernetics (Maass, 2012), provides the opportunity to apply a systemic interdisciplinary and networking, as a new research methodology at the University La Salle, Cuernavaca. According to the National Addiction Survey 2011, found that "in adolescents' alcohol consumption significantly increased." Consumption increased from 31.7% in 2008 to 42.9% in 2011 (Rodríguez, 2012). This problem has a significant social cost level can generate immediate future dropout, emotional problems in young people, joining criminal groups, besides alcohol addiction to snuff and other drugs.

We propose a campaign to prevent the consumption of alcohol, based from the perspective of the collective construction of knowledge (Garcia, 2000), complex problems (Garcia, 2008) where interdisciplinarity perspective offers a deeper look at solving a problem of this magnitude. The campaign will be supported by better results in scientific aspects of physical and behavioral characteristics of adolescents, provided by psychologists, using appropriate communication codes supported by communications specialists, based on market research grounded. In addition, to the previous two demographic data provide marketers and information campaigns having the same effect and results in the exterior as well as the ability to link with organizations and associations concerned with the same issues, information analyzed by international business students, as well legal and market knowledge that encompasses the business of selling alcohol. Thus, a comprehensive understanding of the problem gets to talk to different specialists to consolidate a sustained and coherent proposal.

The networking generates a more effective exchange of information, builds deeper learning and gives meaning to the resolution of problems collectively generate greater awareness in the research group and founded and comprehensive solutions.

Keywords: complex systems, genetic epistemology, cybercultura@, knowledge and learning networks

8. Innovation in social systems theory. *Eva Buchinger, AIT Austrian Institute of Technology, AUSTRIA. (Eva.Buchinger@ait.ac.at)*

The paper will explore the difference between the innovation related programs of the scientific and the economic system. Thereby it will be discussed whether a kind of innovation-program explicitly exists in economic system and how innovation is represented in the decision premises and decision programs of high-tech firms. Innovation has as a somewhat natural starting point in interaction systems which serve as test beds (SS: 435). Thereby, interaction systems are defined as episodes in social processes, constituted by the physical presence of individuals and structured by themes. Since interaction systems as social systems are based on (verbal/non-verbal) communication, language is according to Luhmann a primary mechanism of variation. Every participant in an interaction system can say "no", i.e. he/she can reject the offered communication-contribution of the other participant(s) or he/she can say something unexpected, something new, or something which surprises the others and nevertheless be understood. Variation occurs on the elemental level of system and concerning society, the elemental unit is communication. Variation is therefore (GdG: 461):

- rejection (i.e. communication which rejects communication-content)
- deviance (i.e. deviant reproduction of communication elements and not something like "Spontangenes")
- contradiction (i.e. contradiction of expectation of acceptance)

Variation is accelerated (in the course of the societal evolution) by means such as writ. It enhances as medium of dissemination the options to deal with conflicts because of the liberation from the necessity to be present.

Keywords: innovation, social systems, social processes, Luhmann

9. Sustainable Technology Assessment and Sustainable Scenarios of Techno Social Phenomena. *Michiko Amemiya-Ramírez. Universidad Nacional Autónoma de México, MEXICO. (amemiya@comunidad.unam.mx)*

Sustainable technology can be described as a technological subsystem with marginal or no negative impacts on other technological systems, the environment, society and the economy. To identify such technologies it is necessary to describe their behavior and their interaction with those subsystems in present as well as future scenarios. Due to the dynamics of social systems, a complete assessment to identify sustainable technologies requires a hard systems analysis, that describes the interactions, behavior and characteristics of the technology within a context quantitatively, and a soft system analysis that describes other characteristics and interactions through qualitative and non-measurable characteristics.

System Dynamics is a useful resource to forecast the behaviour of technology related systems for which the hard systems logic is the dominant paradigm. Key variables related to technological assessment subject to system dynamics modelling include population growth, efficiency, energy intensity, release of greenhouse effect gases, and the expansion of risk areas.

The selection of indices, indicators, and variables is determined according to the studied technology. Therefore, a detailed description of the technology is fundamental. In this paper, sustainable technology is briefly described, an example of systems dynamics to forecast quantitative qualities of socio-technological system and conclusions are presented.

Keywords: Sustainable technology; sustainable technology assessment; forecast.

10. Doing Justice: Humans, Society, Life, Evolution. The price to be paid. *Helmut Loeckenhoff, Independent Researcher, GERMANY (loeckenhoff.hellk@t-online.de)*

The last decennia increasingly have been and remain shaken by a sequence of crises. Virtually any aspect, any level of life and human life in particular has been affected. Politically as well as economically the power centres of the world are re-positioning. Behind, pressing constraints impend on the space ship earth: demography, resources, natural environments. The explosively accelerating involvement of humankind overwhelmed natural equilibria; it exhausted spans for natural adaptation. With growing imbalances tensions accumulated, causing or threatening the immanent breakdown of essential structures. The sequels of such fundamental and rapid change has become most obvious in the worldwide power play, by the rows of economic crisis and dangerous societal imbalances. Historical development has approached a 'singularity', a point of no return. It quests radical and fundamental reconsideration of the *conditio humana*, of the relations of men with their world. It concerns as well their outer natural as inner individual/social/ societal environments. In search for patterns and measures to understand as to cope with, appropriate attempts need go back to the emergence and development of life systems. Namely, they retrace to systems *in nascendo*, i.e. in evolution, in history, in societal development. The notion of 'justice' and 'justness' will serve as a paradigmatic example. The view down to the roots and conditions of life, any kind and developmental level, will purvey necessary if harsh insights.

Key words: Life; evolution paradigm; justice/justness; constraints; chances

11. Reflections on the Sociocybernetics of Social Networks. *Bernard Scott, Center for Sociocybernetics Research (UK/GERMANY) BernCES1@gmail.com*

This paper uses concepts from sociocybernetics to explore how the term "social network" is used. It begins by asking what is 'social' about a social network and argues that what is usually intended are forms of reciprocity between social actors and the expectation structures that underpin them. With respect to the form of a given social network and who are its members, a distinction is made between the perspective of an external observer and the perspectives of the members of a social network, as self and other observers. The paper goes on to consider the various forms that social networks may take. There is then a brief discussion of the question: what distinction is there, if any, between a "social network" and a "social system"? The paper next considers the possibilities for different kinds of interaction and communication that are afforded by "social media" and related technologies. A range of possibilities is identified, ranging from the simple sending and receiving of textual messages and images (both of which, for convenience, are referred to as digital "texts") to the capability of archiving, analyzing and retrieving texts and the capability of sending texts, or making texts available, to more than one member at a time. Mention is also made of the potential for tools such as search engines to be equipped with the artificial intelligence and interaction protocols that would allow them to engage with users as surrogate participants in a conversation. The paper then briefly addresses the important questions of social empowerment, privacy and social control that are raised by the widespread use of social media. Finally, the paper considers the form of the emerging "global conversation" and, in particular, the role the RC51 Sociocybernetics group and its sister organization, the American Society for Cybernetics, have in contributing to that conversation.

Keywords: social network; social actor; social media

12. The Paradox of Social Ties after the ICT Revolution: A Second-Order Observation
Saburo Akahori (Tokyo Woman's Christian University / JAPAN)

This paper explores what kinds of distinctions are used when the change of social systems is observed. We seek a more appropriate description of society in the face of online relationships. This task will be carried out through a case study of Japan. In recent years, the significance of social ties has repeatedly been emphasized in Japan. One example is the frequency of use of the Japanese word, *kizuna* (bonds, ties). It sounds odd because conventionally *kizuna* indicates intimate

relationships, not impersonal relationships. Even though the word *kizuna* means strong ties, now it also implies weak ties. Here we examine the reason why a new usage of the word *kizuna* becomes acceptable. We point out two reasons. First, the social ties among strangers become more imaginable by the recent change of communication media after the ICT revolution, especially by the rise of so-called social media. Second, the characteristics of communication or social relationships through social media have been seen as paradoxical (strong and weak).

We can describe the changes more accurately by using another distinction, for example, the classic sociological distinction between personal and impersonal. Social relationships seen in social media can be categorized as personal; however they are sharply distinguished from the relationships in traditional communities. This can also be a clue to rethink modernity. After the ICT revolution, observations on communications or social ties tend to be paradoxical. However, the recent changes can be seen from the meta-level. Sociologists have to describe them through more appropriate frameworks.

13. Can urban society self-organize its government? The case of Teotihuacan. Tom Froese, Universidad Nacional Autónoma de México (t.froese@gmail.com), Linda Manzanilla, Universidad Nacional Autónoma de México (Imanza@unam.mx), Carlos Gershenson) Universidad Nacional Autónoma de México (cgg@unam.mx) MEXICO

Teotihuacan (100 BC – 600 AD) was the first urban civilization in Mesoamerica. During its peak it was one of the world's most populous cities, and its pyramids are still among the world's largest monumental constructions. Yet despite its importance in the sociocultural development of Central America, the governing system of this city is a longstanding scientific puzzle because it was exceptional. Teotihuacan uniquely built itself as an inclusive corporate society. But how could a collective system have been organized to ensure the long-lasting success of the city? More precisely, assuming that citizens act in their own best interest, how could such an aggregate of selfish individuals bring about a stable supply of public goods? This question goes beyond the specific case of Teotihuacan, as it is related with the maintenance of cooperation, and has relevance to social policies today.

We investigated this question by implementing an abstract mathematical model of the Teotihuacan society, with a particular focus on its capacity as a self-organizing and adaptive social system. Related work in systems theory has demonstrated that it is possible to apply well-known principles from artificial neural network self-organization to the issue of global optimization in a collectively organized social system. Interestingly, this simple model makes a sociological prediction based on the city's highly efficient (global) resource optimization: if the city was indeed collectively organized somewhat akin to our model, then we expect there to have been community-wide rituals that would have served the purpose of effecting a temporary behavioral reset of the citizens. We investigated the effects of this reset mechanism for our model at three levels of social organization: the city, its large sectors, and their neighborhoods. We conclude by discussing how well the optimal configuration of our idealized model matches with the city's configuration as suggested by archaeology.

Keywords: self-organization, archaeology, adaptive systems

14. Social Experiments and Comparison of Disparate. Ihar Miklashevich, Belarusian National Technical University, BELARUS (miklashevich@yahoo.com)

The main methodological problem of social systems quantitative description (in wide sense of this meaning) follows from the impossibility to make any kind of real experiments and re-establish initial state for the next approximation of optimal evolution, if necessary. Without making the experiments any of the proposed theories is only the theoretical speculation with spontaneously existing correct predictions. Another problem of these theories is the statement and verification of suitable set of variables. Problem of completeness and closeness of variables set is not investigated from the mathematical point of view. Moreover, the general theorem about the existence of the mathematical images of real alive systems is not established because the huge kinds of systems could be imagined with their own specific properties and variables set. The mathematical apparatus for abstract description of alive system is investigated in present. work.

Mathematical classification of the hierarchical space of aed representation is proposed. It is shown that - normed fuzzy space is suitable mathematical structure taking into account non-standard (and nonArchimedean) nature of the hierarchical space. Problem of principal comparativeness of different system is investigated and entropy criterium is stated. The possibility of making the provided experiments with social systems on the base of transformation of time evolution of single system to

analysis of simultaneous existing systems with the same vector of state is considered. The distinguishing information could be taken as the base of evaluation of vector of space identity for different systems.

Keywords: Entropy, fuzzy space, measure.

15. A systematic approach of death and its scope in contemporary society, David Karminsky, Universidad Anahuac de Oaxaca, MEXICO. David_karminski_katz@hotmail.com

Death, biologically defined as the cessation of life processes of an individual and with clear roles in ecological and evolutionary processes of species, is presented as a problem for the human consciousness that observes it as an impassable logical-cognitive barrier and thus a source of uncertainty and fear. This problematic relationship needs the semantic of social systems and moral to set programs that can generate certainty and control over death and its forms. Enabling death even as a functional element within the system.

Under the need for an interdisciplinary approach, the following work aims to explore the social systems and their relationship with death and the forms it assumes in them, and then go into the social transformations caused by reciprocal changes in the quality and time of death, the conception of the individual and the transformation of the social structure. This reflection aspires to be an attempt to reconfigure our understanding of the scope and function of death in contemporary societies, both in those social processes which are explicit as in those in which lies as a hidden force.

The analysis observes therefore systems as: Religion; which from a dualistic perspective of the being, denied the definitive character of death and transform it into a transmutation process, opening the possibility to different transcendental dimensions qualified to give sense to the immanent reality. The coupling of religion with morality, bring then as consequence, the differentiation of the acts as good or bad, in function of the search for communitarian or individually positive transitions.

16. Litany scathing: Oaxaca Political System repressed and associates tendencies. Arturo Augusto Cano Cabrera Center for the Study of Religion and Culture AC, MEXICO (artoxico@hotmail.com)

This work will develop an explanation of the current operation of the political system as a system partially differentiated in Oaxaca. Based on the theory of complex systems of Niklas Luhmann, about to account for a specific political reality put in the diagnostic field, both the ubiquity of the complexity associated with the topic as their analytical possibilities to explain how a system inside a defined social context. Recognizing the complexity of the local acquires relevance to explain how their political system in an exercise of observation of second order. The state of Oaxaca is one of the states that register itself a highly complex formation, in the year of 2010 has been raised in Oaxaca evolutionary event in its political and social life. For the first time the political party which ruled the Oaxaca state for over 70 years local power lost, the expected changes in the political system were high, particularly the possibility of creating new scenarios and institutional rules "collectively decide in a binding" (Corsi, Giancarlo, et al., 1998, 174).

It will be observed that the three subsystems are within in this partial system of society: the government, the legislation and public opinion. Each one of them operating simultaneously in relation to the others, self-references and its programs. It should be incorporate to meditation the noise which codifies the political communication by the presence of social movements, particularly typified by Luhmann as protest movements that in the political reality of Oaxaca occupy a significant place.

Keywords: Complex System, Political System, Protest Movements.

17. Semantic Cartographies for Social Representations in B-learning activities: A Sociocybernetic perspective. José A. Amozurrutia, UNAM, CEIICH, LabCOMplex, (amoz@labcomplex2.net), Juan Carlos Pérez, Universidad del Altiplano (juancarlosperez@gmail.com) MEXICO

In the state of Tlaxcala, México, "Universidad del Altiplano" is taking a transition process from a traditional teaching and learning model to B-learning alternative. Special attention is on teacher's aptitudes and student's preparation to afford these new academic interactions. We have seen that traditional hypothetical-deductive method based on statistics does not respond to questions we are asking. We are interested on how to understand knowledge process through a mediated

computer technologies not only in teachers and students classroom space, but as we said, in all the actors and academic topologies involved in this new educational model.

In this paper, we are specifically interested on how is the semantic domain topology of Social Representations and Practices in academic actors manifest around new hardware and software devices in B-learning. In the first part we present how we construct a semantic Cartography from main concepts derived from Social representations. Next we explain how we may appreciate from this Cartography, several sub-networks associated with academic actors and linked with different object mediators. Finally, we present some results derived from actors from "Universidad del Altiplano". We use an adaptive model approach, and intense second order reflexivity within a Sociocybernetic Methodology perspective.

18. A sociocybernetic framework for meaning construction. Felipe Lara-Rosano, Universidad Nacional Autónoma de México (flararosano@gmail.com) y María Guadalupe Velázquez-Guzmán, Universidad Pedagógica Nacional (gvelazq@gmail.com) MEXICO.

Meaning is a basic concept when we try to explain individual and social behavior derived from observation and decision making of purposeful systems. These are systems whose behavior can not be explained in terms of the causal, deterministic paradigm but require from the analyst to consider the objectives or goals to be pursued by the system (Ackoff & Emery 1972). To this kind of systems belongs the social as well as the human psychic systems. When one of these systems tries to accomplish its goals in a changing environment it must adapt itself to the new conditions in order to be successful. This gives it the category of purposeful adaptive system.

Luhmann (1971, 2013) introduces the distinction between two aspects of meaning that are related: meaning as medium and meaning as form. Meaning as medium consists on all the different behavior possibilities of the observed object. Meaning as form results from the specific selection by the psychic or the social system of one scenario as the actual one among the countless possible behavior scenarios in the medium. This selection may involve interpretation through hermeneutic methods. In this paper a sociocybernetic framework for the definition and construction of meaning as medium and form in psychic purposeful systems will be presented taking into account the system theoretical approach of Luhmann, the neuroscience approach of Damasio and the sociology of knowledge approach of Berger & Luckmann.

Keywords: Meaning construction, neurocognitive processes, socialization.

19. Sociocybernetic approach to sustainability: collaborative planning, sport fishing and tourism. Michiko Amemiya-Ramírez, Universidad Nacional Autónoma de México (amemiya@comunidad.unam.mx), María Fernanda Contreras del Valle, Laboratorio Nacional de las Ciencias de la Sostenibilidad (fernanda@multicriteria.org), Germán Ponce Díaz, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas (gponced@ipn.mx), Daniel Lluch Belda, Instituto Politécnico Nacional, Centro Interdisciplinario de Ciencias Marinas (dlluch@ipn.mx), Luis A. Bojórquez-Tapia, Laboratorio Nacional de las Ciencias de la Sostenibilidad (luis@multicriteria.org)

Citizens participation in policy making is one central tenet of sustainable development. This is generally referred as principle two of the Rio Declaration, which has materialized itself around the world in different forms of governance. Yet, some may argue that governance regarding sustainable development can be intentionally constructed to fulfill particular idiosyncratic interests. Sustainability issues and concerns can indeed be ambiguous, uncertain, contested and context-dependent. They are always framed within socio-political processes. Addressing these issues and concerns, nevertheless, depends upon an objective appraisal of the different potential pathways towards sustainability. These different pathways are expressed as the stakeholders' narratives, testimonies, anecdotes or even as formal scientific language. This suggests that effective governance rests on three elements of second order cybernetics: self-reference, self-observation and self-reflection. Here we present a collaborative planning approach to sustainability assessment that includes those elements of sociocybernetics. Through a system dynamic model of coastal tourism development in Mexico, we illustrate how sociocybernetics can be used to explore alternative scenarios, identify thresholds and tipping points, determine points of intervention and ultimately guide environmental policy making. The system model was structured as two subsystems- tourism development and sport fishing- that referred the principal drivers of change in the studied region. Different scenarios unveiled the thresholds and tipping points of the system function under different conditions of tourist investment and fishing effort limits. Results enabled the stakeholders to visualize the effects of their particular objectives and identify the opportunities for intervention, which in turn may translate into specific sustainable policy.

20. The complexity of meanings of rural-urban relocation of high dam migrants in time: case study of keban dam migrants in Elazig, Turkey. Ilknur Oner, Firat University, Elazig, TURKEY. (ihgmavi@yahoo.com, ioner@firat.edu.tr)

Relocation and displacement experiences have been observed in many countries by many social scientists. The meanings and reflections of such above mentioned experiences and projects have been put forward in the literature. Urban clearance Act (UK), high dam Project related migrations (Egypt, Canada, USA, Brasil etc.), disasters (Japan) exemplifying some of the different reasons of such activities. However, their meanings, forms of reflections and effects differs in time (short, medium and long term). The meaning and reflections of such relocation and displacements under the effect of complex systems, social networks and interactions of social actors which are in change in time as well. Therefore, changes in the meanings (given and derived-gained) may take different forms in relocation places. Thus, differing reflections of meaning of relocations can be evaluated in the frame of construction, deconstruction and reconstruction aspects separately and together as well. This study will be elaborating field work findings in the frame of constructive, deconstructive and reconstructive appearances of meaning in time.

This study will be elaborating findings of Keban Dam Migrants experience field work study in this above mentioned frame. A case study of Keban Dam migrants covers a rural-urban relocation of 805 housing units in a ward of Elazig city center. A follow up study findings of this group have been derived since 1990's is the main focus of this present study. Elaborations will be basing on comparative level of discussions: findings of this study and findings of related similar international coexisted other studies. Methodological difficulties of study will be discussed as well.

Keywords: High dam migrants, Keban Dam, relocation, construction deconstruction, reconstruction.

21. Regional Sustainability Model. A Networking Building Tool for the Promotion of Sociocybernetics, Luciano Gallón, Universidad Pontificia Bolivariana (luciano.gallon@upb.edu.co)

This research deals with mental models of reality that can be captured and encoded into a model built with the help of software tools based on system dynamics. It is done to better understand the structure and dynamics of development and poverty of human beings and societies in a particular region. That the simultaneous interaction of variables can be simulated on a PC, easily, makes it possible to have available, for the first time, a tool to analyze the consequences of management and government decisions in different areas of intervention in a region and can better understand the consequences on their sustainability. The process of modelling the Regional Sustainability Model (RSM) was divided into four phases: initial drafts, structured drafts, adaptation of previous models and modular RSM. This paper provides an overview of the developments that followed the modelling work through the stages in order to document the application of the methodology of system dynamics. The RSM development described in this article took two years and was part of the author's doctoral thesis. Finally the paper suggests why it is attractive to move forward in structuring and feeding the database that supports the RSM, determining connectors with public databases, explore the possibility of designing and operating a data observatory useful for the system dynamics modelling community so that, by networking, the RSM can be expanded, improved and used as a teaching tool in which system dynamics serves as a transformative mechanism in the new curricula focused on education for sustainable development and including the ideas of sociocybernetics.

Keywords: Sustainability; System Dynamics; Sociocybernetics.

22. Contributions of cultural diversity in land use planning to facilitate adaptation, Lilina Recamán, Universidad del Cauca, COLOMBIA (lilianarecamn@yahoo.es)

Currently the dynamics of change in ecosystems and their interaction with the social, cultural, economic and technological processes result in transformative changes and disturbances in the system. It is then necessary to implement management processes considering natural capital, ecosystem functions, ecosystem services, human welfare and the drivers of change to facilitate the socio-ecological resilience. (Martín-Lopez et al., 2009). This is reflected in the adaptation of socio-ecological systems and proposals for land use planning.

But in order to advance in the system, you have to know in depth the socio-cultural dimension, with its dynamic social learning, cultural exchange, its influence in the governance and decision-making that contribute to the management of natural resources in terms of change, uncertainty, flexibility, and complexity.

Thinking about ordering, is to think of a whole, and that all work must be sought integration partner ecosystem. The man himself, in his relationship with nature, according to their world view will different levels, which will always prevail their daily practices as harmful both friendly with the environment. This is where you should explore, discuss, propose, validate, and arrange to meet with the lessons learned that can provide a holistic approach and respond to situations of socio-ecological transformation to respond to any disturbance, generating impacts irreconcilable with your system and adaptability.

Keywords: Adaptive Management, Interdisciplinary, Complex Systems, Land, Territory, Cultural Diversity, Ecosystem Approach.

23. Identity and absorption of insecurity. An approach to the concept of religious lending in Niklas Luhmann's social theory, Antonio Emmanuel Berthier, Center for Interdisciplinary Studies of Religion and Culture (antonioberthier@yahoo.com)

According to Niklas Luhmann's social theory, religion is considered a communication system linking its operations in the medium of sense (sinn) and producing a forking on reality by means of the distinction immanent / transcendent. Through metaphors, personifications and cosmogonies, the semantics of different religious programs endows the indeterminate side of the world with a transcendent meaning that sheds their menacing character. Furthermore, religion put its observation structure at the service of the other social systems through a specific type of coupling. When this happens, religion can generate a lending in the form of a particular provision of meaning that allows psychic and social systems operate religious distinctions without losing its self-referential and autopoietic character.

This work delves into the nature and implications for empirical research of two types of lending offered by religion to the psychic systems: the absorption of insecurity regarding the uncertainty about the environment and the generation of a religious identity at four different levels: a personal identity that enables the psychic system distinguish itself as part of the religious semantic universe; a identity of program that allows its secondment to a religious program rules, an institutional identity by assuming roles within religious organizations, and a cultural identity that provides him a series of common values derived from the coupling between morality and religion.

Keywords: systems theory, religion, religious identity.

24. Complex systems approach and critical thinking in the construction of the research project about the youth in a "marginalized" community in Merida, Yucatan, Mexico Ksenia Sidorova, Universidad Autónoma de Yucatán (sidorova@uady.mx), Roxana Quiroz Carranza, Universidad Autónoma de Yucatán (rquiroz@uady.mx), Astrid Karina Rivero Pérez, Universidad Autónoma de Yucatán (astrid.rivero@uady.mx)

The paper discusses the experience of the construction of a collective research project focused on the analysis of the young people from a "marginalized" urban zone as knowing subjects that construct their own ideas on what it means to be young, participate in social networks, and have had a unique experience related to the human right, which more than often are violated in the case of "marginalized" youth. The experience we discuss deals with the very construction of the research object. Based on the constructivist paradigm of the systems approach of Rolando García, our research has lead us to make explicit our own standing on the empirical problem we have chosen and the epistemological and theoretical position we adapt to construct the research problem.

We demonstrate that the "parts" and the "processes" our system is made of are the product of our standing on the issue we analyze in the research. Adherents to the "epistemology of the South" of Boaventura De Sousa Santos and the critical perspective on culture and development of Esteban Krotz, we apply "alternative" concepts to "name" the empirical referents and serve of the complex systems thinking to reveal the "other" side of the urban zone known as "sur de Mérida". Marginalized, poor and violent, according to the official discourse, in our research it also stands out as a context of social injustice, racism, and discrimination in which some young people have risen as social actors and Tourainian subjects and have defied their life circumstances.

Keywords: complex systems, critical systems, youth.

25. **Participatory network analysis as tool for enhanced reflexivity.** *Patricia Almaguer-Kalixto*, Centro de Estudios Rurales y de Agricultura Internacional (CERAI), grupo GESES/ Universidad de Zaragoza, (ende.v.research@gmail.com), *Pedro J. Escriche* Centro de Estudios Rurales y de Agricultura Internacional (CERAI), Universidad de Zaragoza. (pescrich@unizar.es)

This paper discusses the development of new technologies applied to participatory research focusing in social network analysis. Social network analysis is an interdisciplinary approach that combines concepts of network theory and system theory to analyze complex social issues such as migration, political influence, and environmental governance among many other topics. It is mainly used to create visual representations of interrelated data, representing relationships between social elements with different attributes and properties of different types and at different scales.

The analysis of social networks has been also used as an instrument to analyse social change. From collaborative graphs to the use of network analysis in participatory context such as collective mapping, social network data collection, social network analysis for problem-solving (Fuller 2012), network modelling engaging stakeholders (Voinova and Bousquetb 2010), the use of network analysis to strengthen community partnerships (Provan et al 2005) or the use of stakeholder and social network analysis to support participatory processes (Hubacek et al 2006, Amengual-Morroand Franquesa-Griso, 2013). These are good examples of applied information technology oriented to systemic representation but they rise issues of ethics (Kadushin 2005, Borgatti & Molina 2005), means and ends of knowledge communication (Müller-Prothmann 2006).

From our perspective Network analysis in participatory research frameworks can be used as a tool for enhance second order observation, second order reflexivity. Conclusions are oriented to outline the elements required to integrate concepts of a participatory network analysis strengthening action reflexivity and research systematization.

Keywords: network analysis, reflexivity, participatory research, complex socialissues

26. **Back to citizens the national sovereignty: the networked 5 stars movement in Italy** , *Aida Huerta Barrientos*, Universidad Nacional Autónoma de México, MEXICO (aida.huerta@comunidad.unam.mx).

On the one hand, Italy's economy (in recession from late 2011) is suffering from a combination of intertwined difficulties that are fuelling each other: a poor underlying growth rate, high public debt, and a limited lending power of its financial institutions. On the other hand, citizens are getting more and more enrolled in the political system, developing in their own way the modes of organization to influence it. In this economic-political -social context, the Parliamentary election were placed recently, resulting on the citizen's protest vote in favor of the networked 5 Star Movement (Movimento Cinque Stelle).

Using web-based social networking services, the 5 Stars Movement promotes the campaign of Italian social, cultural and political sensitization by its titular Beppe Grillo. In the past, the protest vote was considered as undemocratic intrusion into politics, but nowadays it is considered as a vehicle to social transformation. However, with the Italian's protest vote, the Italian Parliament has become the youngest one in the whole of the western world and in the entire history of the Italian Republic, and the political women participation has been increased from around 20% to 30%. The purpose of this paper is to analyze, in the current global context of the twenty-first- century, the process of the social change that is taking place in Italy.

Assuming that social networks are preconditions for contemporary social movements, and Internet the privileged platform to social building of the autonomy, in this paper we first identify the social actors of the 5 Stars Movement. Then we highlight the technological platforms as social networks on Internet used by the 5 Stars Movement. Next, we quantify the impact of its participation on the last Italian Parliamentary elections. Finally we outline the new forms of social organization that are currently emerging in Italy.

Keywords: social networks; Italy; social transformation.

27 Open systems, open data, open government: technology and transparency. Chaime Marcuello, Universidad de Zaragoza SPAIN (chaime@unizar.es)

Technology evolution shows a double and permanent tension between control and emancipation, or if it preferred, power and freedom. Both sides are always present in any applied technology. This paper attempts a description and a critical analysis to explore, from a sociocybernetical approach, the relationship between technology and transparency considering some of the effects of Information and Communication Technologies (ICTs) in the open data movement, specially, its consequences in the idea of open government and open knowledge.

The paper is divided in five parts including the introduction and conclusions. Firstly, it approaches the notions of transparency and describes the main milestones in the "open" mainstream movements, including open data, open knowledge and open government. Secondly, it analyses the technological requirements and other constraints in order to develop the open vision. Thirdly, it proposes a sociocybernetical framework to reflect and improve the "traceability" of public policies that are implicit in the open government movement.

Keywords: Technology, Open Systems, Open Government, Transparency

28. Second screen and Political Talk-Shows: Measuring and Understanding the Italian Participatory Couch Potato. Fabio Giglietto, Università di Urbino Carlo Bo (fabio.giglietto@uniurb.it)

According to several recent reports, the practice of using a 'second screen' while following a television program is quickly becoming a widespread phenomenon. When the secondary device is used to read or contribute to online comments about a watched program, most of the discussion takes place on popular social media such as Facebook and Twitter. The paper presents what is, to our knowledge, the first study on a full season dataset of Twitter conversations about a TV genre. Starting from August 2012, we collected all the Tweets (1,703,064) containing at least one of the official hashtags of the eleven political talk shows (607 episodes) aired by the Italian free-to-air broadcasters. We found a significant correlation between the Tweet-rate-per-minute during airtime and the audience of the show's episode. Furthermore, we demonstrate a technique, based on cluster analysis, aimed at identify key moment in a season. On this subset of contents, we applied qualitative content analysis to identify users' level of participation on the scale of access, interaction and participation.

29. Understanding hegemonic forms of autopoiesis and power reproduction: towards the construction of critical Sociocybernetics to explain mainstream media functioning in North America. Juan Carlos Barrón Pastor, UNAM-CISAN, MEXICO. (jbarronp@unam.mx)

Luhmann (2000) explained that society is an immense communication network. Communication is an auto-contained, expanding universe; human being is structurally coupled to communication through their consciousness, and alters it always. According to Luhmann (idem), mass-media is social system (autopoietic, self-referenced and with operational closure) of communication that excludes corporeal presence among interacting actors, and has multiple means of interaction and even mechanisms of interpenetration to other social systems. In this article, I explore how Luhmann's explanation would work in the case of four mainstream media corporations from North America. I will show how this regional media operate in expansionist forms and reproducing hegemonic undercurrents (Gramsci, 1936), and feedback power dynamics (Castells, 2011) through the recreation of parallel realities transforming the 'real' reality too (Krieg, 1991). The study shows how mainstream media express hegemonic fantasies that permeate and transform realities, but also receive certain highly discriminated feedback from their 'audiences'. To conduct the investigation, I apply a modified version of the adaptive model proposed by Amozurrutia (2011) to explore how it could work to explain autopoietic and interactive mechanisms that mainstream media operate to maintain and expand their powerful influence in the construction of reality.

Keywords: Mainstream media, North America, Power.

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