2012 Joint Conference of the American Society for Cybernetics and the Bateson Idea Group 9-13 July 2012 in Asilomar, California

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ASC

BIG

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An Ecology of Ideas

Our ideas form, grow, and thrive in relationship. Ideas inspire and transform each other and their bio-cultural medium. New ones emerge unexpectedly, some persist, some change, and some are lost, as if they were living.

The American Society for Cybernetics (ASC) and Bateson Idea Group (BIG) come together to hold a conference on the relations among ideas as seen from multiple perspectives. We come from many disciplines but have common roots including cybernetics, circularity, reflexivity, language, culture and systems. For many of us these roots are enmeshed with biology, information, pattern, design, art, aesthetics, ethics and more.

In a world rife with factionalism and disenchantment, we will engage in conversations to integrate disciplines of knowing while taking into account our histories and considering our futures. We will regard both the parts and the whole that arises from the relations between the parts — and thus becomes the context for all the parts. We are concerned with the world that arises from how we live our ideas.

ASC and BIG have common interests in dynamic systems of thought, wisdom and learning. We accept that there are many views and value exploring the relationships between them, rather than in insisting that any view is "right".

Arising
In the ecology of mind
ideas are alive

Out of newness,
change and dissipation
Generative thinking

An ecology of ideas
arises from
our living language

poems by Kathleen Forsythe

Themes

We seek to find a balance between the spontaneous and the planned. We intend to seed conversations with various forms of presentation, ranging from keynote speakers to workshops and performances; all of which can be considered works of art in the domain of ideas. Three particular themes pertain to our notion of "an ecology of ideas":

Paradigm
What do our current paradigms determine or enable, and what would changes to these imply? How could we guess what other things would change along with the changes we desire? How would we implement a shift in an ethical and socially acceptable manner?

Recursion
Recursion (like its fellow concepts, self-reference and reflexivity) is open to many interpretations depending on who you are, and the context you are interested in. We are interested in both what is held in common between these different interpretations, and what is particular to each. We wish to explore not only the implications of acting based on how we understand these ideas, but also what happens when we proceed unaware of the differences.

Praxis
Why are praxis and theory often separated; and how can they better be brought together? In what ways are the ideas of cybernetics and systems inherently concerned with practice? Does the phrase "the paradox of praxis" evokes a resonance?

Conference Website

http://www.asc-cybernetics.org/2012

Schedule

Monday, 09-Jul-2012

15:00 - 17:00 ASC General Business Meeting (Venue: Chapel)
18:00 - 19:00 *Dinner (Venue: Crocker)*
19:30 - 21:00 Nora Bateson: Welcome
An Ecology of Mind: A Daughter's Portrait of Gregory Bateson
Film and Discussion (Venue: Chapel)

Tuesday, 10-Jul-2012

09:00 - 10:00 Klaus Krippendorff (Venue: Chapel)
10:00 - 10:30 *Coffee break (Venue: Crocker)*
10:30 - 12:00 **Poster Session** (Venue: Chapel)
Ricardo Barrera and Ricardo Frías
Art Collings
Thomas Fischer
Christiane M. Herr
Timothy Jachna
Mark Johnson and Paul Hollins
Victor MacGill
August Mohr
Wilf Rigter
Gi TaekRyoo
Vandresen, Monique
12:00 - 13:00 *Lunch (Venue: Crocker)*
13:00 - 14:30 **Reflexivity Panel** (Venue: Chapel)
Ranulph Glanville
Louis Kauffman
Klaus Krippendorff
Vladimir Lefebvre
Frederick Steier
Stuart Umpleby

Paper Session A (Venue: Nautilus)
Faisal Kadri
Kate Slaymaker
Mário Vieira de Carvalho

15:00 - 16:30 **Reflexivity Panel cont'd** (Venue: Chapel)
Ranulph Glanville
Louis Kauffman
Klaus Krippendorff
Vladimir Lefebvre
Frederick Steier
Stuart Umpleby

Paper Session B (Venue: Nautilus)
Jeremy Lent
Simone Mahrenholz
Katie King

17:00 - 18:00 **Workshops**
Jeff Bloom: Teaching An Ecology of Mind (Venue: Nautilus)
Erik Graffman: What is Matter? Never Mind. What is Mind? No Matter. (Venue: Chapel)
18:00 - 19:00 *Dinner (Venue: Crocker)*
19:30 - 21:30 **ASC Performances** (Venue: Chapel)
Kathleen Forsythe and Madeline von Foerster: Poetry and Art Performance
Susan Parenti: Unentitled for Piano and 8 Voices
Jeff Glassman and Lisa Fay: Theatre Performance
Paul Pangaro: Theatre Performance

Wednesday, 11-Jul-2012

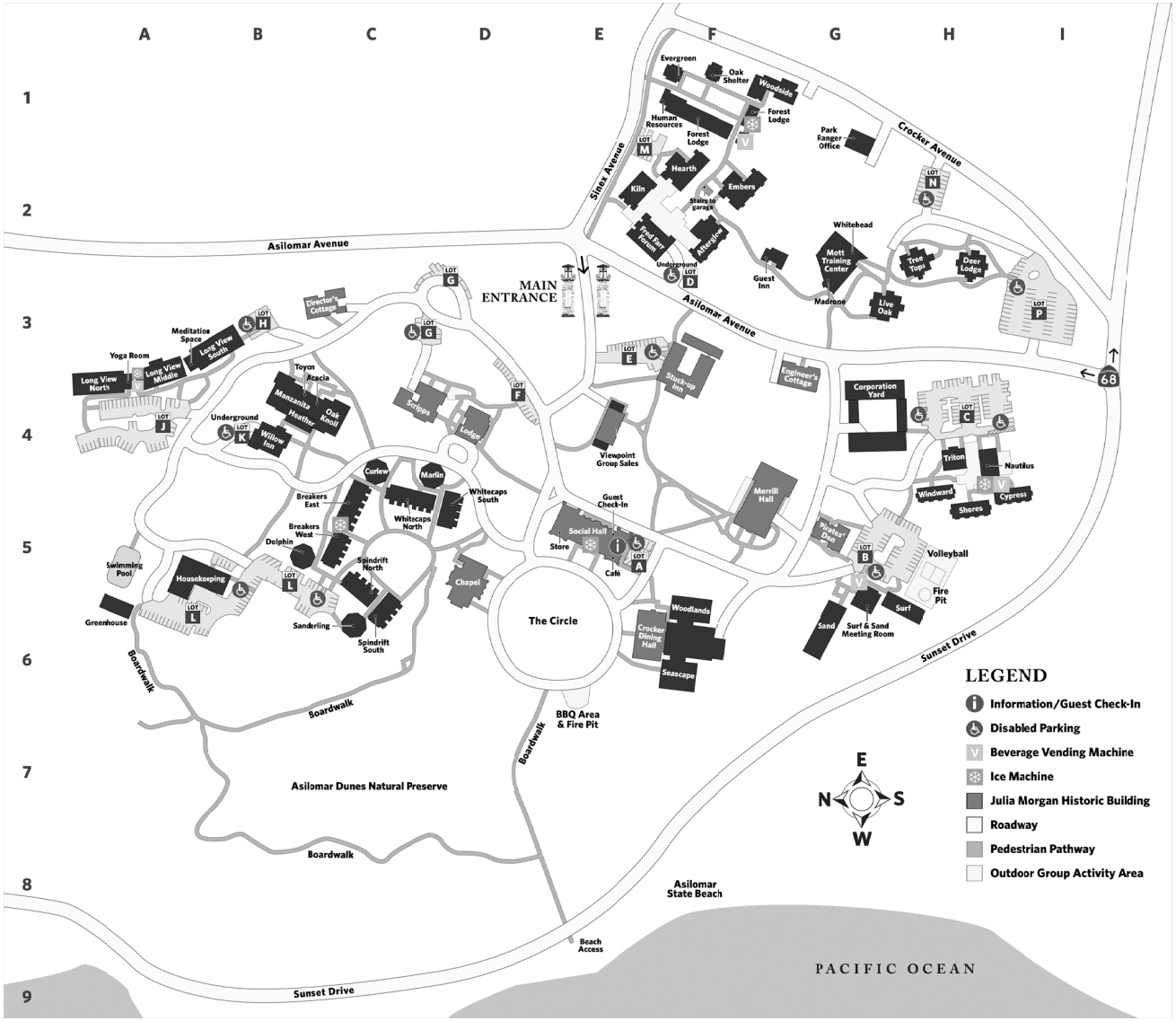
09:00 - 10:00	Terrence Deacon (Venue: Chapel)	
10:00 - 10:30	*Coffee break (Venue: Crocker)*	
10:30 - 12:00	**Paper Session C** (Venue: Chapel)	**Paper Session D** (Venue: Nautilus)
	Colin Campbell	José Cabral
	Ray Ison	Jher
	Justin Vinston	Daniel Rosenberg
12:00 - 13:00	*Lunch (Venue: Crocker)*	
13:00 - 13:45	Jeremy Sherman	
13:45 - 14:30	Peter Harries-Jones	
15:00 - 16:30	**Paper Session E** (Venue: Chapel)	**Paper Session F** (Venue: Nautilus)
	Dai Griffiths	Ramsey Affifi
	Graziele Lautenschlaeger	Augustus Bacigalupi
	Will Varey	Bruce Clarke
17:00 - 18:00	**Workshops**	
	Lisa Fay & Jeff Glassman: Picturing the Frame: Performing the Form (Venue: t.b.a.)	
	Mark Johnson and Paul Hollins: Too Much Information! (Venue: Chapel)	
	Magnus Ramage et al.: Journals in Cybernetics and Systems (Venue: Nautilus)	
18:00 - 19:00	*Dinner (Venue: Crocker)*	
19:30 - 20:15	Carol Wilder: Screening of two Films (Venue: Chapel)	
20:10 - 21:30	Guiles Performance Ensemble: Theatre and Music Performance (Venue: Chapel)	

Thursday, 12-Jul-2012

09:00 - 10:00	Humberto Maturana (Venue: Chapel)	
10:00 - 10:30	Ximena Dávila (Venue: Chapel)	
10:30 - 11:00	*Coffee (Venue: Crocker)*	
11:00 - 12:00	Graham Barnes (Venue: Chapel)	
12:00 - 13:00	*Lunch (Venue: Crocker)*	
13:00 - 13:45	Eric Vatikiotis Bateson (Venue: Chapel)	
14:15 - 16:15	**Paper Session G** (Venue: Chapel)	**Paper Session H** (Venue: Nautilus)
	Alessandro Bellafiore	Kathleen Forsythe
	Philip Baron	Sebastian Gaggero
	Ely Dorsey	Maria do Céu Rueff
	Magnus Ramage	Marilyn Wedge
16:30 - 18:00	**Paper Session I** (Venue: Chapel)	**Paper Session J** (Venue Nautilus)
	Anthony Chaney	Hernando Gutierrez-Prieto
	Lance Nizami	Andreas Hieronymi
	Judith Lombardi	Elio Porto
18:00 - 21:30	*Closing dinner (Venue: Seascape Room)*	

Friday, 13-Jul-2012

09:00 - 10:00	Rex Weyler (Venue: Chapel)
10:00 - 10:30	Debora Hammond (Venue: Chapel)
10:30 - 11:00	*Coffee (Venue: Crocker)*
11:00 - 11:45	Stephen Nachmanovitch (Venue: Chapel)
11:45 - 12:00	Pille Bunnell: Closing (Venue: Chapel)
12:00 - 13:00	*Lunch*



LODGING

Afterglow Rooms 1301-1312	F2
Breakers East Rooms 821-832	C5
Breakers West Rooms 833-840	C5
Cypress Rooms 717-724	H5
Deer Lodge Rooms 1121-1130	H3
Director's Cottage	C3
Embers Rooms 1313-1324	F2
Engineer's Cottage	G3
Forest Lodge Rooms 1202-1211	F1
Guest Inn Rooms 901-903	F2
Hearth Rooms 1325-1336	F1
Live Oak Rooms 1101-1110	G3
Lodge Rooms 201-218	D4
Long View North Rooms 101-110	A3
Long View Middle Rooms 111-120	A3
Long View South Rooms 121-130	A3
Manzanita Rooms 1001-1012	B4
Oak Knoll Rooms 1013-1024	C4
Pirates' Den Rooms 501-510	G5
Sand Rooms 605-610	G6
Scripps Rooms 301-323	D4
Shores Rooms 709-716	H5
Spindrift North Rooms 849-856	C5
Spindrift South Rooms 841-848	C6
Stuck-up Inn Rooms 401-414	F4
Surf Rooms 601-604	H6
Tree Tops Rooms 1111-1120	H3
Whitecaps North Rooms 809-820	C5
Whitecaps South Rooms 801-808	D6
Willow Inn Rooms 1025-1036	B4
Windward Rooms 701-708	H5
Woodside Rooms 1212-1223	G5

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Chapel Auditorium	D5
Curlew	C4
Dolphin	C5
Evergreen	F1
Fred Farr Forum	E2
Heather	C4
Kiln	E2
Madrone	G3
Manzanita I & II	B4
Marlin	D4
Merrill Hall	G4
Nautilus	H4
Oak Knoll I & II	C4
Oak Shelter	F1
Sanderling	C6
Scripps	D4
Surf & Sand	G5
Toyon	B4
Triton	H4
Willow I & II	B4
Whitehead	G3

OTHER

BBQ Area	E6
Crocker Dining Hall	F6
Fire Pits	H5
Guest Check-In	E5
Hearst Social Hall	E5
Human Resources	F1
Meditation Space	A3
Mott Training Center	G2
Park Ranger Office	G1
Park Store	E5
Phoebe's Café	E5
Seascape	F6
Swimming Pool	A5
Conference and Event Sales	E4
Viewpoint	E4
Volleyball Court	H5
Woodlands	F5
Yoga Room	A3

PARKING LOTS

Parking Lot A	E5
Parking Lot B	G5
Parking Lot C	H4
Parking Lot D	F2
Parking Lot E	E3
Parking Lot F	D4
Parking Lot G	D3
Parking Lot H	B3
Parking Lot J	A4
Parking Lot K	B4
Parking Lot L	B5
Parking Lot M	E2
Parking Lot N	H2
Parking Lot P	I3

Venue Map

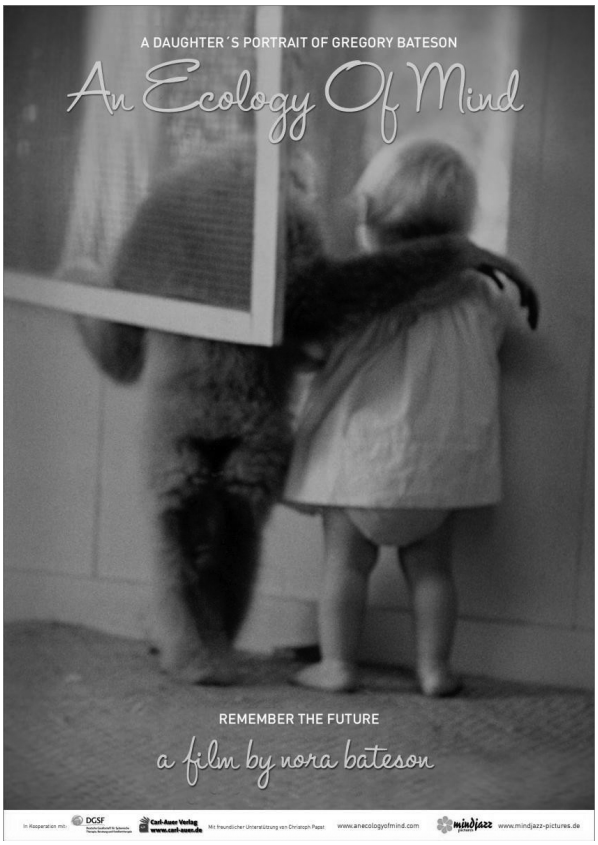
Film

An Ecology of Mind: A Daughter's Portrait of Gregory Bateson

Film and Discussion
Nora Bateson
Time: Mon, 7:30pm - 9pm
Venue: Chapel

An Ecology of Mind is a film portrait of Gregory Bateson, celebrated anthropologist, philosopher, author, naturalist, systems theorist, and filmmaker, produced and directed by his daughter, Nora Bateson. The film includes footage from Bateson's own films shot in the 1930s in Bali (with Margaret Mead) and New Guinea, along with photographs, filmed lectures, and interviews. His youngest child, Nora, depicts him as a man who studied the interrelationships of the complex systems in which we live with a depth motivated by scientific rigor and caring integrity. Through contemporary interviews, along with his own words, Bateson's way of thinking points us in the direction of insight and creativity in the ways we deal with the challenges confronting the human race and the natural world.

This film hopes to inspire its audience to see our lives within a larger system – glistening with symmetry, play, and metaphor. It is presented as an invitation to ask the kinds of questions that could help thread the world back together from the inside.



Nora Bateson Biography

Nora Bateson is the writer, director and producer of the award-winning documentary An Ecology of Mind, a portrait of her father Gregory Bateson's way of thinking.

Nora has been a filmmaker, lecturer, and writer in many capacities and calls herself an interloper as she travels between conversations in different disciplines and with different audiences. She has developed curricula for schools in Northern California, and produced and directed award winning multimedia projects on intercultural understanding.

Currently Nora is traveling around the world with the film holding conversations and seminars with international change-makers, ecologists, anthropologists, psychologists, designers, and IT people. Utilizing the film as a tool to introduce some of her father's thinking tools, Nora is engaged in giving her audiences a lens through which to see the world that effects not only the way we see the world, but how we interact with it. In addition to hosting discussions at film festivals from Brazil to Budapest, she is currently writing a book about the practical application of systems thinking and complexity theory in everyday life.

"The task she took on was hardly easy. Pinning Bateson down takes a fair amount of effort. Coming up with a simple definition of, say, systems theory is one thing. Doing so in a way that educates the average filmgoer without making her film feel like a mere academic exercise is something else entirely. Yet Nora Bateson manages to do so by always keeping the man she knew at the center. " Dan Webster, NPR

Plenary Presenters

Graham Barnes

Speaker
Time: Thurs, 11am - 12noon
Venue: Chapel

Early in his career Graham Barnes, with a foundation grant, founded Fellowship for Racial and Economic Equality, an organization that helped integrate people of color into the leadership of segregated white institutions. The success ofthis work led to an invitation to work with the largest military posts of the U.S. Army. During this period he founded Southeast Institute in Chapel Hill, NC, designed a therapist training program for traditionally African-American universities under a grand from the Lilly Endowment, Inc, and also led in developing the experimental Master of Arts program in clinical psychology and psychotherapy at Southeast Institute. More than twenty students completed the experimental two-year program, the first graduate program in psychotherapy in the United States. Accrediting Associations recommended the program to universities as a model of excellence for the education of psychotherapists. In Chapel Hill he was also adjunct lecturer in the Department of Psychiatry of the University of North Carolina and lecturer in the School of Public Health.His first lecture tour of Sweden, in the mid-1970s, was motivated by a desire to find out about how Swedes democratically managed their companies and other organizations and themselves. He arrived in Sweden in 1983 and was naturalized in 1996. In Sweden and Norway he has had long-term assignments with companies such as Pharmacia, Norsk Hydro, and Swedbank. He began teaching group therapy in Belgrade in the 1970s. As a result of his teaching in Zagreb, a school for the cybernetics of psychotherapy was established in the Department of Psychiatry of the Faculty of Medicine of the University of Zagreb where he has been a guest lecturer since 1990. This school has led in the education of psychotherapists in Slovenia as well as in Croatia. As a direct result of the social commitments of this school and of Graham's teaching and guidance, a foundation was established to promote democracy in Croatia and cooperation between leaders and citizens in the republics of the former Yugoslavia. One of the first activities of the foundation was to give intellectual support to StepeMesic, the first president of Croatia to promote democracy, seeking to end the oppressive and corrupt policies and practices of his predecessor. Graham assisted the foundation to organize a series of annual seminars on the theme of all people living together cooperatively. In 2004 the foundation organized a meeting of systems experts, including Governor Jerry Brown of California, to celebrate Gregory Bateson's centennial. The focus of this intensive three-day seminar was on trust and the cybernetics of leadership, and it brought together, on the island of Brijuni, elected leaders of the countries of the former Yugoslav republics for a dialogue on democracy and regional cooperation. What made these seminars unique was the focus on the practical application of cybernetics to politics and the everyday practice of democracy. Graham's expertise in cybernetics was demonstrated in his PhD dissertation at Royal Melbourne Institute of Technology. Earlier he was awarded a graduate degree in theology by Harvard University Divinity School. He was given the Eric Berne Memorial Award in 2005 for his cybernetic study of the role of theory in psychotherapy. He is a Fellow of the American Society for Cybernetics and is included in Marquis Who's Who in the World and Who's Who in Medicine and Healthcare. He lives in Stockholm where he practices cybernetics and psychotherapy, works with young leaders, consults and writes. Drottninggatan 73c, SE-111 36 Stockholm; +46 70 582 2021; e-mail: grahambarnes@me.com www.inform.se

Ximena Dávila

Escuela Matriztica de Santiago
Speaker
Time: Thurs, 10am - 10:30am
Venue: Chapel

What is in the substratum of our thinking, doing and feeling? How to think the thinking we think? How do we feel what we feel?

From the moment that we are born we transform ourselves with others, immersed in cultural conversations that fragment our world. We grow up thinking that there is an inside and an outside; there is an independent reality; cause and effect; duality of non-related opposites; independence between subject and object; mind and body separated in a painful fragmentation. In the end, we live a co-existence of dualities and fragmentations in our daily living. It is in that place-non-place, in that time-non-time that the happening of unitary epistemology can be seen. How?

We all have been born in the implicit trust, given our biological structure, that there will be a world that will receive us with loving tenderness. However, this is not always the case. In this fragmented manner of living all possibility of coherence with the natural world and the relational worlds is broken. So nowadays, we try to live and to live together, in a manner that may give us signs of

a thread that unifies our existence; as Bateson would say, the pattern that connects us.

Along with Humberto Maturana we have developed, over the past 12 years, a experiential-explicative proposal that reveals that the guideline that connects us exists, and that it has been present within each one of us through our biological human origin, and this pattern is love. Loving as living beings in the continuous conservation of living in unity with our niche; loving as a fundament of the unitary epistemology of all knowing and the pattern that connects all, living together in well-being.

Ximena Dávila will be co-presenting with her colleague Humberto Maturana. Through her work with individual and family counselling she has developed the ambience of "liberating conversations" as reflexive conversations for the recovery of self love and self respect in the face of cultural pain. This has brought her to realize that human living, since its origin in the ancestral family is intrinsically both biological and cultural. Dávila has a vast experience with corporations in Chile, wherein she guides conversational investigations on topics such as "The sense of the Human Being in organizations" and "Toward a Co-inspirational management." Furthermore, she has participated in numerous conferences, seminars, congresses, workshops, short courses, reflective circles, symposia and reflective meetings in different academic and business settings.

Terrence W. Deacon

Department of Anthropology, U.C. Berkeley
Speaker
Time: Wed, 9am - 10am
Venue: Chapel

Complex (adjective) — etymology: from com- "with" + plex from plectere orplicare "to weave, braid, twine, fold."

Why are computers so radically different than brains in terms of the presence or absence of intrinsic phenomenology? The difference is one of complexity, but not complexity in mere numbers of elements, interactions, operations per time and space, or even logical depth. The difference is dynamical.

In better agreement with the etymological derivation of 'complexity' than the contemporary colloquial definition, I propose a measure of the complexity of a system that is largely orthogonal to what can be collectively described as mereological, compositional, or information theoretic conceptions of complexity. These latter measures are based on some means of quantifying numbers of distinguishable and analytically irreducible components and their interrelationships, or some quantification of the analytic difficulty or computational size of a system's description. In contrast, I propose a measure that captures the degree of convolutedness or recursive infolding of dynamical relationships upon themselves that results in distinguishable emergent levels of temporally asymmetric system attractor dynamics; i.e. discrete nested inversions of orthograde dynamical tendencies.

A system with greater dynamical depth than another consists in a greater number of nested emergent dynamical levels. Thus a thermodynamic system has less dynamical depth than a morphodynamic (e.g. self-organizing)system has less dynamical depth than a teleodynamic (e.g. living or mental) system, and so forth. Dynamical depth can provide a precise and systematic account of the fundamental difference between computation (low dynamical depth) and cognition (high dynamical depth), or inorganic chemistry (low dynamical depth) and living chemistry (high dynamical depth). Systems with low dynamical depth may consist of many more components and interrelationships between these components than systems with high dynamical depth. Dynamical depth is essential to explain the degree of agency, behavioral autonomy, internal coherence, semiotic capacity, and sentience of a system whereas mereological, componential, or information theoretic measures of complexity provide no insight into these phenomena.

Professor Deacon's research has combined human evolutionary biology and neuroscience, with the aim of investigating the evolution of human cognition. His work extends from laboratory-based cellular-molecular neurobiology to the study of semiotic processes underlying animal and human communication, especially language. Many of these interests are explored in his 1997 book, The Symbolic Species: The Coevolution of Language and the Brain (W. W. Norton).

His neurobiological research is focused on determining the nature of the human divergence from typical primate brain anatomy, the cellular-molecular mechanisms producing this difference, and the correlations between these anatomical differences and special human cognitive abilities, particularly language. In pursuit of these questions he has used a variety of laboratory approaches including the tracing of axonal connections, quantitative analysis of regions of different species brains, and cross-species fetal neural transplantation. The goal is to identify elements of the developmental genetic mechanisms that distinguish human brains from other ape brains, to aid the study of the cognitive consequences of human brain evolution.

His theoretical interests include the study of evolution-like processes at many levels, including their role in embryonic development, neural signal

processing, language change, and social processes, and how these different processes interact and depend on each other. Currently, his theoretical interests have focused on the problem of explaining emergent phenomena, such as characterize such apparently unprecedented transitions as the origin of life, the evolution of language, the nature of information, and the generation of conscious experience by brains. This is fueled by a career-long interest in the ideas of the late 19th-century American philosopher, Charles Sanders Peirce and his theory of semiosis. His new book, Incomplete Nature: How Mind Emerged from Matter (W. W. Norton, 2012), explores the relationship between thermodynamic, self-organizing, evolutionary and semiotic processes and provides a new technical conception of information that explains both its representational and normative properties.

Kathleen Forsythe and Madeline von Foerster

Poetry and Art Performance
Time: Tuesday evening
Venue: Chapel

An artist, published poet and writer, Kathleen Forsythe has a lived commitment to imagination and innovation as antidotes to war and conflict. Kathleen Forsythe is one of the first knowledge architects in the world and combines her knowledge in cybernetics and systemic thinking to generate practical strategies and projects that open new directions for the civil society. Most recently she has been involved with the development of the award winning SelfDesign Learning Community, a unique online learning environment and Class 1 independent school. With her colleagues at SelfDesign, she is a 2006 award winner of the Prime Minister's Award for Teaching Excellence. Her current orientation is to work with families with children on the Autistic Spectrum. At this venue she will be reading poetry inspired by the paintings of Madeline von Foerster.

Madeline von Foerster (who will not be able to attend) is the granddaughter of Heinz von Foerster. Through her application of the techniques of the Flemish masters to modern subject matter she challenges the ironic detachment of much contemporary art in favor of intimacy, knowledge, and connection. Although linked stylistically to the past, her paintings are passionately relevant to the present, as such timely themes as deforestation, endangered species, and war find expression in her work. Madeline's artworks are in collections around the world and have been featured in numerous publications. She was named as one the "Top Contemporary Surrealists" by Art and Antiques magazine. Born in San Francisco, von Foerster studied art in California, Germany and Austria, and currently resides in New York City. Website: http://www.madelinevonfoerster.com.

Jeff Glassman and Lisa Fay

Theatre
Time: Tuesday evening
Venue: Chapel

Lisa Fay and Jeff Glassman have been making densely packed compositions for theatre together as a duo since 1991, touring nationally and internationally, and appearing frequently at ASC conferences. The duo is known for applying complex composed structures to ordinary daily human behavior and originating the performance techniques required for these compositions to manifest in the medium of live theatre – embodied composition. Each performed theatre piece builds a compositional technique into portrayals of daily life; twists, reversals, sudden juxtapositions and transformations induce cracks in the veneer of consistency. In order to handle complexity, graphic notations and scores accompany the development of their work. The results, ranging from humorous and disarming to mesmerizing and disorienting, arise as metaphors for social processes. Theatre offers itself as a shared social stomping ground. With this frame, Fay and Glassman work to make explicit the implicit relationship between second-order cybernetics and live theatre.

Guiles Performance Ensemble

Theatre and Music
Time: Wed, 8:10pm
Venue: Chapel

We (Arun Chandra, Ben Kapp, Ben Michaelis, Kate Slaymaker and Justin Vinson) are a group of composers who want to make audacious extrapolations socially significant by performance. Over the past few years, we have been meeting irregularly to discuss papers and books on cybernetics. From these discussions, we have created compositions in sound and theater, which we have presented in Olympia. Cybernetics is for us both a starting point for composition, and a domain of exploration. Working towards performances allows us to maintain a set of social links. Offering performances to audiences allows us to observe their as-yet-unknown consequences: both the pieces on the audiences and the audiences on the pieces. With this in mind we are offering a short set of theatrical and musical compositions.

Debora Hammond

Organization Development, Sonoma State University

Speaker
Time: Fri, 10am - 10:30am
Venue: Chapel

One of the foundational concepts in the emergence of systems thinking is the recognition of non-linear or circular causality. This address will explore the significance of recursive processes in human systems, particularly in terms of the challenges to decision making in an increasingly complex, fast-paced and globally interconnected world. Foundational work informing this inquiry will include James G. Miller's concept of the "decider," responsible for navigating the input, processing and output of matter, energy, and information; as well as his interest in the phenomenon of "information input overload." Further inspiration is drawn from Einstein's oft-quoted remark that insanity is doing the same thing over and over, and expecting different results, which is echoed to some extent in Kenneth Boulding's caution against sub-optimization, i.e. finding the very best way to do something that shouldn't be done at all. The human species has thrived because of its tremendous capacity for learning and innovation. More than any other species, we have apparently succeeded in overcoming the evolutionary imperative to adapt to our environment, instead dramatically altering the environment to suit our own needs and desires. And yet, we seem to have reached a crossroads, which calls for a new kind of learning. If we heed this call it may provide an opportunity for the emergence of a new phase in human evolution. This further iteration in the human experiment will require both serious reflection on our current situation and incorporating that understanding into the calculations of our future course.

Debora Hammond has been teaching in the Hutchins School of Liberal Studies since 1996. She completed her doctoral work in the history of science at the University of California at Berkeley, focusing on the history of systems thinking. She has been particularly interested in finding ways to nurture more participatory, co-creative approaches to decision making. Her teaching in the Hutchins School, which emphasizes student-centered interactive learning, is an active embodiment of this orientation. In addition to teaching undergraduate courses on healthcare, monetary systems, and food systems, she works with graduate students in the Action for a Viable Future MA program, and is actively involved in the local community on food policy and sustainability. She has recently taken over as Director of Sonoma State's MA Program in Organization Development.

Peter Harries-Jones

Department of Anthropology, York University, Ontario

Speaker
Time: Wed, 1:45pm - 2:30pm
Venue: Chapel

In my last presentation to the ASC, I dealt with four ways in which Gregory Bateson altered arguments of cybernetic notions of information circuits in order to achieve an epistemology of meaningful communication. Pickering's recent study of British cybernetics, The Cybernetic Brain now adds a fifth alteration, the notion of homeostasis. In Pickering's view Bateson, together with Ronnie Laing, helped change the 'black box' approach to homeostasis typical of the earlier days of cybernetics, through showing how feedback emerges from performance and returns reciprocally to performance in 'performatively adapting systems' (Pickering). Bateson and Laing made this understanding the root of all their therapeutic intervention which invoked , at the same time, a duty to care.
My concern in this paper is transfer this frame of enquiry to the most recent conditions of ecological destruction, or in the words of Polly Higgins, 'Ecocide.' Higgins wishes to create enforceable, legally binding mechanisms in national and international law to hold account perpetrators of long term, severe damage to the environment: in short to place ecocide alongside the international conventions on genocide. In so doing, the law would create a 'duty to care' about ecosystems that would clearly hold corporate managers responsible for system destruction. Higgins brings together some hopeful signs, models for possible expansion to international law, among them the Philippine Constitution which Section 16 Article II states: "The State shall protect and advance the right of people to a balanced and healthful ecology in accord with the rhythm and harmony of nature."

Nevertheless this paper claims that Higgins will require (1) acceptable definitions of an ecosystem's sentience in order to define 'ecocide' and replace the currently acceptable notion of ecosystem-as-commodity (2) acceptable models of dynamic balance (feedback models) which address, in publicly understandable terms, the major characteristics of 'performatively adapting systems" and duty to care (3) mapping devices, iconography, and diagrams – not merely numbers – to support (2). To support this discussion I will draw on examples from my last ten years with Biosemiotics especially with Bateson's contributions to that sub-branch of science.

Peter Harries-Jones was born in Oxford, England. He attended secondary school in both England and the United States and universities in the United States, South Africa, and Oxford where

he obtained his doctorate. Subsequently he was a research officer in the Institute for Social Studies, Zambia where he introduced together with his research group the subject of social networks into anthropology. He taught in the University of Wales, Swansea; University of Khartoum, Sudan; and York University, Ontario, Canada. Until the 1980s he was a specialist in the field of African Studies. Subsequently he developed an interest in communication studies, systems theory and ecology. This research culminated in an intellectual biography on Gregory Bateson's 'ecological epistemology' drawn from the Bateson Santa Cruz archives, entitled A Recursive Vision: Ecological Understanding and Gregory Bateson (1995). He was one of the first attendees of the "Gatherings in Biosemiotics' and co-edited the internet journal SEED together with Edwina Taborsky which published some of the first contributions from biosemiotics. That experience introduced him to many of the current members of that group. He is currently researching a second book on Bateson covering his earlier years in anthropology (drawn from the Library of Congress archives) and the Bateson legacy in Biosemiotics, where Bateson shares 'founder' status along with C. S. Peirce and Jacob von Uexküll.

Klaus Krippendorff

Gregory Bateson Professor for Cybernetics, Language, and Culture – Emeritus

Speaker

Time: Tues, 9am - 10am

Venue: Chapel

I hope to continue Gregory Bateson's intellectual path towards a critical, socially active, and culturally sensitive cybernetics that needs, however, to shed some of its current constraints. Along this journey, I will enlist Ludwig Wittgenstein's work on language, Mikhail Bakhtin's writing on dialogue, and Richard Rorty's epistemology to claim the obvious, that cybernetics and human agency arises in discourse (i.e. institutionally constrained conversations) which create, as all discourses do, their own artifacts.

One of the constraints that I wish to overcome is the individualism enshrined in the notion of the observer and radical constructivism. Another is the naturalist preoccupation with understanding and description at the expense of human agency. I suggest that searching for foundations in biology, cognitive science, mathematics, and various holisms leaves little space for human agency and makes it difficult for cyberneticians to engage larger social constructions – family, social organization, technology, economics, legal and political systems, or terrorism. To me, biology, cognitive science and mathematics are self-organizing discourses that define, play with, and construct their own realities. A discourse that claims universal truths is condemned to be blind to the constitutive use of language in performing agency and to the constructedness of its reality.

Cybernetics has a history of pursuing a variety of recursive constructions, which encourage not only self-reflection but also the liberation from confining social constructions whether through therapy, innovation, or revolution. When Margaret Mead called for a cybernetics of cybernetics, she insisted that cyberneticians address the inevitable politics in which they work. When Gregory Bateson argued against the ecological blindness of conscious purpose, he envisioned a cybernetics that does not fall prey to and instead provides a radical alternative to traditional scientific theorizing. I suggest that moving human agency into the center of the discourse of cybernetics continues these and other still unfinished projects and presents cybernetics as the practice of reflexivity in the social domain.

Klaus Krippendorff is the Gregory Bateson Professor for Cybernetics, Language, and Culture at the University of Pennsylvania's Annenberg School for Communication. He holds a Ph.D. in communication from the University of Illinois, where he studied with W. Ross Ashby, and a graduate degree in design from the avant-garde, now defunct, Hochschule für Gestaltung, Ulm. He is a Fellow of the American Association for the Advancement of Science, the International Communication Association, the East-West Center in Hawaii, and Netherlands Institute for Advanced Studies. He is a Past President of the International Communication Association, founder of the International Federation of Communication Associations, and active in the American Society for Cybernetics. Krippendorff has published over 100 journal articles and several books on communication, social science methodology, system theory, cybernetics, and design. Among his books are The Analysis of Communication Content (co-ed.); Information Theory; Content Analysis (translated into several languages); Communication and Control in Society (ed.); A Dictionary of Cybernetics; Design in the Age of Information (ed.); The Semantic Turn: A New Foundation for Design; The Content Analysis Reader (co-ed.); and On Communicating, Otherness, Meaning, and Information. He is currently exploring the role of language in the social construction of selves, others, and social organizations; issues of conceptual entrapment and emancipation; the human use of cyberspace; and the design of future technologies.

Humberto Maturana

Escuela Matriztica de Santiago
Speaker
Time: Thurs, 9am - 10am
Venue: Chapel

Who are we? From where do we do what we do? How do we do what we do? These are fundamental questions in every reflection about the nature of our existence that have been answered in different manners at different moments of the history of humanity. In each case the reflections have necessarily been realized from basic notions whose acceptance have determined the nature of the answer. At the same time, those basic notions were accepted a priori as evident conditions of the cultural present in which they appeared, or they were fundamented, if there were doubts, with some other more basic notions that were also accepted a priori. For this occasion, I will not make a historic reflection but I will refer to the biological fundaments of all cognitive statements. In this process I will specially consider the operation of the nervous system in its continuous generation of changes of internal relations of activity. I will refer to the operation of the living beings in their continuous generation of them selves in their molecular autopoiesis, which altogether constitute the closed system that generates all the worlds that a living being lives in its operation as a totality in the organism-niche unity in which it exists.

In this process, I will reveal that we human beings through our operating in languaging and conversation are generators of everything, even of our own existence in what myself and Ximena Dávila refer to as *Fundamental Relativity*.

Humberto Maturana Romesín was born in Santiago, Chile. He studied medicine at Universidad de Chile, neurophysiology and anatomy at University College of London, and Biology at Harvard where he received a PhD in 1958. He continued at MIT where he worked with the neurophysiology of vision. After returning to Chile, in 1965 he worked with colleagues to found the Science Faculty at the University of Chile; of which he is now Professor Emeritus. In 2000 Maturana and Ximena Dávila co-founded the Matriztic School of Santiago (http:// matriztica.cl/eng). Maturana is the recipient of several national and international awards including the Chilean National Science Award for his research on perception and his approach to the biology of cognition. He has been bestowed with Honorary Doctorates by Belgium, Spain and Chile in recognition of his vast body of scientific work concerning living (autopoiesis), language and cognition (biology of language and cognition) and humanness (biology of love). Most recently he and Ximena Dávila have developed the biological-cultural Matrix of Human Living.

Stephen Nachmanovitch

Music
Time: Fri, 11am - 11:45am
Venue: Chapel

Stephen Nachmanovitch performs and teaches internationally as an improvisational violinist, and at the intersections of music, dance, theater, and multimedia arts. He is the author of Free Play: Improvisation in Life and Art (Penguin, 1990). Born in 1950, he studied at Harvard and the University of California, where he earned a Ph.D. in the History of Consciousness for an exploration of William Blake. His mentor was the anthropologist and philosopher Gregory Bateson. He has taught and lectured widely in the United States and abroad on creativity and the spiritual underpinnings of art. In the 1970's he was a pioneer in free improvisation on violin, viola and electric violin. He has presented master classes and workshops at many conservatories and universities, and has had numerous appearances on radio, television, and at music and theater festivals. He has collaborated with other artists in media including music, dance, theater, and film, and has developed programs melding art, music, literature, and computer technology. He has published articles in a variety of fields since 1966, and has created computer software including The World Music Menu and Visual Music Tone Painter. He lives with his wife and two sons in Charlottesville, Virginia. He is currently performing, recording, teaching, and doing new writing about Bateson and about improvisation. www.freeplay.com.

Paul Pangaro

Theatre
Time: Tuesday evening
Venue: Chapel

Paul Pangaro presents a multi-persona composition on the notion of recursion. Pangaro is a software designer, performer and entrepreneur. He has been an active member of the ASC since the 1980s and is currently chair of the trustees and an ASC fellow. In the Interaction Design program at the School of Visual Arts in New York City he teaches a course on the cybernetics of design, co-developed and co-taught with Hugh Dubberly at Stanford University for six years. Active in musical theatre and cabaret for much of his career, his recent professional publications and presentations have focused on "designing for conversation". His Ph.D. with Gordon Pask included the development of personalized hypermedia environments, including authoring, an extension of THOUGHTSTICKER. His new venture, General Cybernetics Inc., develops conversation software to increase velocity of insight and reliability of agreement.

Susan Parenti

School for Designing a Society
Theatre and Music
Time: Tuesday evening
Venue: Chapel

Unentitled for piano and 8 voices is an attempt to invite a kind of self-referential turn in having the piano player speak, while playing, a bunch of sentences that might come to generate characters, who might interact to form scenes, which might eventually create the sense that the person at the keyboard is playing a non-speaking role: a listener.

Theatrically, the keyboardist–demonstrating an antique instrument in the sci-fi museum exhibit, sitting in the street with evicted belongings, playing the wedding reception, tuning a homeowner's piano, getting distracted by new radio in the practice studio, typing a company press release about downsizing in the steno pool–undergoes a transformation of scenic context implied by the various voices. The identity of the sitter at the keyboard becomes reinterpreted by the spoken texts The voices specified in the score of *Unentitled* are, in order of first appearance: museum guide, Max Weber, mover, voiceover, cop, hubbub, stenographer, expletive news, grammar news, punctuated news, metanews, News from Nowhere, piano owner.

Susan Parenti is a composer and playwright, and teaches at the School for Designing a Society.

Jeremy Sherman

University of San Francisco
Speaker
Time: Wed, 1pm - 1:45pm
Venue: Chapel

Bateson took pains to distinguish energy from information, which he defined as a “difference that makes a difference.” Odum countered that energy also fits that definition since all energetic behavior involves a difference in system X’s state causing a difference in system Y’s state. Are information and energy the same? Dominant approaches today suggest that they are.

Bateson’s “makes a difference” was a double entendre combining both the meaning applicable to energy and the colloquial meaning: conferring practical or adaptive advantage. Fleshing out Bateson’s second meaning, Deacon notes that unlike energy, information is always functional for a self about or representative with respect to something absent. Simplifying, if energetic work is reducible to a synchronic “change in system X makes change in system Y,” information is always a diachronically evolvable multiply realizable and ambiguous “X for Y is about Z.” For example the text, “Makes a difference” for us evolving English-speaking selves, is ambiguously about the double entendre’s two ideas. Sherman provides an intuitive overview to Deacon’s approach to information, both how it is different from energy and how information relationships could spontaneously emerge from physics and chemistry.

Jeremy Sherman, Ph.D., M.P.P. studied with Gregory at UC Santa Cruz in the mid ’70′s and became a founding member of Terrence Deacon’s Bateson-inspired Consortium on Emergent Dynamics in the late ’90s. Sherman applies Bateson to both the vast and the everyday. With the consortium he collaborates on specifying the differences between energy and information and enumerating the steps from matter to mattering, or from natura to creatura. With Psychology Today he applies Batesonian concepts to everyday decision-making in a weekly blog called “Ambigamy: Insights for the deeply romantic and deeply skeptical.” Sherman also teaches psychology and rhetoric at University of San Francisco, writes two other blogs — Mindreaders Dictionary and Soulnerd — and composes, plays bass and sings in local jazz combos. He has a masters in public policy from U.C. Berkeley and a Ph.D. in evolutionary epistemology from Union University.

Eric Vatikiotis-Bateson

University of British Columbia
Speaker
Time: Thurs, 1pm - 1:45pm
Venue: Chapel

In this talk I use several empirical and conceptual topics currently central to my teaching and research to spell out an uneasy connection between biological coordination and human cognition and to discuss the implications this has for communicable characterizations of reality. In list form, these topics include: computationally assessing spatial and temporal coordination within and between individuals during linguistic and musical performance, with particular emphasis on the role of fluctuations in the coordination, which facilitate short-term entrainment (as occurs when two people walking side by side fall into step) and block sustained synchrony, which turns out to be pathological in biological systems; the predominance and probably systemic necessity of what I call contentless communication, which dominates so much of human interaction and has now been canonized by the technology mediating communication; the breakdown of recursion as a means of negotiating our link between the real world, where patterns that connect (á la G. Bateson) are possible, and the navigational hazards of the cognitive world of categories and distal objects where such patterns are annihilated by their very formulation.

We all think we know that learning about the world cannot simply be a matter of acquiring and manipulating inherently static and context-free name/thing-named dyads; yet this oversimplification too often serves as an adequate description of how we approach the world. Rather, a more complex and unstable approach is required that incorporates the dynamism and connection to context necessary for learning and survival. As C.S Peirce recognized so well, our engagement with reality is built on possibility, not certainty, and therefore minimally requires probabilistic mechanisms for relating to the world. Peirce's triadic (actually tetradic) system for iteratively constructing reality needs to be reconsidered in terms of biological coordination where both similarity and difference inform the system.

The production and perception of human speech are among the most complex functions that differentiate us from less-evolved species. Building on research into the visual events that supplement speech recognition and early attempts to synthesize human speech, Dr. Eric Vatikiotis-Bateson has done extensive work on investigating the various mechanical and neurological processes that combine to create speech, as well as on the visual processing of facial movement that aids in comprehension. His work has crossed many disciplinary lines, including biology, computer science and engineering, and has drawn extensive interest from a variety of organizations around the world.

Rex Weyler

Cofounder of Greenpeace International and writer of the Deep Green blog on the gp website

Speaker

Time: Fri, 9am - 10am

Venue: Chapel

Human growth has overshot our habitat's capacity. A growing community calls out for "sustainability," but struggles to identify genuine solutions. We will discover in this examination that we must learn, as Gregory Bateson warned, to align the way we think with the way nature behaves. Nature appears as co-evolving systems, persistently coming into being through interactions and feedbacks. The survival unit in nature is not a "species," but a "species-in-a-habitat," a relationship. It is the relationship that must change. Humanity is a subsystem within a dynamic matrix of biophysical systems. Genuine solutions to the human predicament will design for pattern and changeability within these ecological systems upon which we rely.

We will discover genuine solutions by apprenticing ourselves to nature, not by attempting to reshape nature to fulfill our desires. This apprenticeship starts with a commitment to place, to a living ecosystem, learning to harvest its bounty without destroying it. Thus, part of the answer we seek is in localization, not globalization; and in simplification, not complexity. These changes imply a new human economics based on dynamic homeostasis, not on endless growth, a path articulated by observers such as Bateson, Alice Hamilton, Dana Meadows, Herman Daly, Howard Odum, and others. We can live richer, more rewarding lives, with less stuff. We can discover the Real Wealth of this world in Nature, Family, Community, and Creativity.

We may experience trauma as we witness the destruction of nature. We live in an abusive relationship, a Batesonian "double bind." We either go insane, or we go creative. Art, metaphor, and poetry may help provide the necessary language of relationship. Finally, we might understand Bateson's emphasis on "sacrament," a celebration and manifestation of the inherent mystery experienced in relationship with larger systems that we do not control.

Rex Weyler is a writer and ecologist. His books include Blood of the Land, an indigenous history of the Americas, nominated for a Pulitzer Prize; and Greenpeace: The Inside Story, a finalist for the BC Book Award and the Shaughnessy-Cohen Award for Political Writing. He is a co-author of Chop Wood, Carry Water: Finding Spirituality in Everyday Life.

In the 1970s, Weyler was a co-founder of Greenpeace International and editor of the Greenpeace Chronicles. He has served on campaigns to preserve wild rivers, endangered species, indigenous forest land in Argentina, and is currently active with Tanker Free BC, protecting the BC coast from tar sands oil tankers.

He writes about ecology, economics, and energy in his "Deep Green" blog at Greenpeace International; he appears on The Tyee, Energy Bulletin, other sites, and at his own blog atrexweyler.com. He is currently writing a book about "Ecology and Economy." Weyler lives on Cortes Island, where he cofounded the Hollyhock education centre.

Carol Wilder

Films and discussion

Time: Wed 7:30pm - 8:15pm

Venue: Chapel

Carol Wilder is Professor of Media Studies and film at The New School in New York, where from 1995-2007 she was Associate Dean and Chair of Media Studies and Film. From 1975-1995 she served on the Communication Studies faculty at San Francisco State University, including as Professor and Chair. She has also served on the faculties of Oberlin College and Emerson College. She is

author of a many of articles and essays on communication theory, politics and the media, and the rhetoric of the Vietnam/American war. Her film Puttin' on the Dog screened at many venues and festivals. She received (with John Weakland) the National Communication Association Golden Anniversary Book Award for Rigor & Imagination: Essays from the Legacy of Gregory Bateson(Praeger 1982). In 2007-2008 she was a Fulbright Senior Scholar at Hanoi University, where she created a Media Lab and lectured throughout Vietnam on media education for the 21st century. She is currently a Fulbright Senior Specialist. Her book Crossing the Street in Hanoi is forthcoming from Intellect Press/University of Chicago. Carol will be presenting two films:

- "In Honor of Gregory Bateson" February 1979. 28 minutes. Toasts to Gregory Bateson by Jerry Brown, Heinz Von Foerster, John Weakland, Paul Watzlawick, and Kenneth Burke.
- "Paradigmatic Conservatism" February 1979. 30 minutes. Gregory Bateson speech, published in Rigor and Imagination (Praeger, 1982).

Abstracts

Recursion and Responsibility in Eduction

Presentation (Paper Session F)
Ramsey Affifi
Time: Wed, 3pm - 4:30pm
Venue: Nautilus

According to Peirce, life comes to know through different types of inferential (though not necessarily propositional) processes, including abduction, induction, and deduction. Although these terms describe ways an organism can be said to construct knowledge, they cannot describe what is inferentially unique about how multiple organisms come to know through interacting together. In such cases, neither what is becoming known, nor the living beings coming to know, remain constant, and conventionally recognized inferential processes become parts of recursively dynamic, meta-inferential relational contexts. Thus, learning that goes on in intersubjective interactions forms and is formed by, but is different in kind from abstracted, context-neutral, non-interactive, inferential types.

The relationship between two living beings is made possible by the capacity of each to learn from the other, each becoming something new by what the other becomes, with each bringing forth latent possibilities in the other (and in themselves) through co-constituting relationship. They can be said to 'educe' knowledge in each other, and the knowledge forming process made possible through this co-constitution can be called 'eduction.' In eduction, knowledge is drawn out through relationship: it interacts with its own context; it binds and is binded by, shifts and is shifted by, the relationship between the beings who constitute it in interaction. That these terms share etymological roots with 'educate' and 'education' make explicit the learning, intersubjectivity, and developmental character of life. Beings, such as humans, who can become aware of their involvement in eductive knowing, bear a responsibility that comes with realizing that how and what they know creates relationships and changes selves. Because knowing necessarily has relational consequences, eduction, unlike solipsistic inferential types, solicits us to approach our interaction with others, of any species, with the care and discretion of an educator.

Refinement: A Rigorous Description of Autonomous Adaptive Agents

Presentation (Paper Session F)
Augustus Bacigalupi
Institute for Augmenting Minds
Time: Wed, 3pm - 4:30pm
Venue: Nautilus

Many theories of mind have been proposed, yet they often ignore the physical implementation of our only proof of concept for cognition, namely embodied animal brains. Any theory and implementation of embodied physical cognition must account for the physical constraints that an environment imposes on evolving and learning agents in practice. Reflection upon this praxis re-informs theory in a way that challenges the current paradigm of information, namely discrete and independent binary states. Although this paradigm has enabled scientific success for over half a century, it is the main reason complex systems such as cognition remain mysterious. This paper is inspired by classic information theory, but goes further to account for the distinct and inter-dependent nature of information as it exists in embodied cognitive agents. Refinement is a concept defined to empirically test for autonomous adaptive behavior. Refinement provides the theoretical basis for understanding, creating, and testing synthetic

autonomous agents, homologues to simple biological organisms. Refinement is defined by both internal complexity and the capacity to do work. In order to internally represent their environment, all sentient agents must structurally embody complexity. This internal structural bias not only represents many distinct patterns, it also embodies the inter-correlations between patterns. Internal complexity is a necessary pre-condition for increasing an agent's chances of survival via adaptation. However, complexity doesn't measure how the system dynamically achieves successive states of increased complexity. For that, a path function is required. This path function, able to measure the dynamics from state to state, is the time integral of power, i.e. work. Arbitrary degrees of internal complexity are not useful to the adaptive agent if they do not increase the agent's autonomous capacity to do increasingly useful and complex work in its environment. Complexity, although necessary, does not ensure that an agent's behaviors are relevant to its environment. Adaptive work potential measures this relevance. When complexity and work increase, Refinement increases denoting increased chances for persistence.

The Root And Responsibility Model

Presentation (Paper Session G)
Philip Baron
Faculty of Electric and Electronic Engineering. University of Johannesburg, South Africa
Time: Thurs, 2:15pm - 4:15pm
Venue: Chapel

We are currently facing social and environmental violations including environmental pollution, poor labour practices and unethical economic practices. These unsavoury activities continue to take place across the globe owing to lack of awareness, economic pressure and/or complacency. Isolating the immediate "cause" does not solve the problem. Closing the factory that exploits child labour provides a momentary solution; the violation continues and another factory exploiting child labour is established in a different area. The problem resurfaces as the nature of the system and its vested interests allow for the same or similar problems to manifest. Until the problem is framed in a manner that highlights the recursive nature of the relationships between the different stages and connections of any product/service or behaviour, a lasting solution eludes our efforts.

The Root and Responsibility Model proposed in this paper addresses this inadequacy by providing both corporate companies and consumers a responsibility rating for each step in the production/service chain. The goal of this model is twofold: to empower and educate consumers as to their cooperation of more than the superficial features of their chosen products, but rather awareness of the systemic connection between all the links in the production/service chain including vested interests and resource abuses. Secondly, companies can apply the model to their products/services and market their responsibility rating for the broader public's enquiry down to the beginning or root of the products economic life. The rating can be applied as a minimum certification standard imposed by independent standardisation bodies. End users voice their approval by purchasing the products/services from transparent companies that meet or achieve adequate responsibility ratings in their social and ecological practices. Companies in violation of acceptable social practices cannot plead ignorance as to the goings on in their own or their supplier's chain of production. Companies compete in an atmosphere of total disclosure regarding social and environmental matters giving rise to a new ethic of consumerism.

Neighbors of the ISO 26000

Poster Session
Ricardo Barrera and Ricardo Frías
CESDES Universidad Nacional de la Patagonia
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

There are tensions between development and growth , industrial activity and environmental protection, use of non renewal resources and the future of mankind, and so on.

Corporate social responsibility and competitiveness collide in the same way. Is it necessary a paradigm's change of management? All core subjects of social responsibility are crossed by the ethic of interdependence and systemic approach. But at the same time we live in a socio-economic and, maybe, also a managerial crisis. Many authors suppose the actual global economic model is obsolete, and its consequences won't be solved by the same model, because itself is their main cause.

Any change in this aspect implies on one hand a strong restatement of what has been done in the past and its actual consequences (there are several papers and opinions about it); and on the other hand, implies rethinking a concrete proposal from the present situation that involves a revision of the economic model. In order to do it, we should explore also the diverse and possible consequences that can take place from such changes. We propose, as a starting point, the ISO 26000 as the paradigm to analyze the different dimensions of the problem been described above.

Ecology of Ideas and Ecology's Ideas

Presentation (Paper Session G)

Alessandro Bellafiore
Department of Communication Sciences, Faculty of Sociology, University of Urbino

Time: Thurs, 2:15pm - 4:15pm

Venue: Chapel

The rise of ecological ideas has meant the entry of a new population in the ideas ecosystem. A walk-on producing an huge change in self-representation of human groups in relation to the rest of the existing world; as an unavoidable consequence, previous narratives became apparently inadequate and a process of innovation is therefore necessary, with an interesting opportunity for applying the paradigm of ideas evolution on a concrete and significant topic. A change in the description of ourselves as species – with our role, our goals, our rights – and the acceptance of both a set of limitations and a more inclusive concept of variance, seem to be the two main elements; in few words, it's the well known switch from an anthropocentric perspective to an ecological one.

It means a mutation in social institutions, and in culture, of which, in a circular dynamic, institutions are an expression; a mutation that present conditions and the urge of ecological issues require to be quick and effective, but that institutions (firstly, the political ones) often look to be unable to perform or guide.

Here there is the main concern in translating new ideas into new conditions: evaluating if ideas and culture in our society are still sufficiently flexible and adaptive – in Bateson's opinion, the distinctive qualities of a cultural behavior – or if, through iteration and self-confirmation, have developed some rigid features of an instinct.

Many theories and paradigms have been developed about change and adaptive management but, on the other hand, west societies have created a complex web of rules, laws and contracts aimed to a cultural continuous removal of variance and unforeseen from everyday life and policies.
Which conditions may be obtained earlier: the ones producing an effective evolution in ideas and institutions, or those tied to a potentially dramatic state shift?

Teaching An Ecology of Mind: Teaching-Learning as Personal and Social Recursive Systems

Workshop

Jeff Bloom
College of Education, Northern Arizona University

Time: Tues, 5pm - 6pm

Venue: Nautilus

Education continues to remain embedded in positivist and reductionist paradigms. The assumptions of these paradigms work their way insidiously into institutional and individual practices, including those contexts that focus on complex systems in the natural and social sciences. Over the past year, I have used the film, An Ecology of Mind (Bateson, 2010), as the central artifact in a university Freshman Seminar. The course is presented in a way that is consistent with the themes explored in this film and with the more general notion of learning as involving complex and recursive systems. Relationships, from those among participants in the course (including those which characterize the classroom dynamics), to those that comprise the natural and social worlds, serve as the material that is examined. The course is recursive, personal, social, and open to possibilities (as a stochastic system).
This workshop will examine the positivist assumptions that typify educational systems and undermine learning as complex systems, then provide perspectives on how we can work in ways that support complexity. Participants will be provided with opportunities to share their own practices, suggest specific activities, and discuss how teaching—learning at all levels can be reworked as complex systems.

The Ethical Limitations of Computational Design Strategies

Presentation (Paper Session D)

José Cabral

Time: Wed, 10:30am - 12:00noon

Venue: Nautilus

Over the last decades architecture has been characterized by a series of computational design strategies aiming at a paradigm shift in the profession by adopting operative ideas such as evolutionary, liquid, interactive, morphogenetic, parametric, emergent, etc. This paper discusses how most of these design strategies, by restricting themselves to either form-making or form-finding, end up just reenacting the old linear and deterministic perspectival paradigm that has been the basis of architectural practice since the

Renaissance. Thus, most contemporary buildings are produced with an instrumental use of cybernetics without escaping prescriptiveness and determinism. This happens despite the series of exemplary attempts carried out by architects such as Cedric Price in the 1960s, which focuses on architectural indeterminacy.

In fact, current design and construction process takes advantage of an intensive use of cybernetic principles to expand their possible scenarios and cope with the uncertainties of ill defined tasks. However, this strategy faces an ethical limitation because they fail to take this openness to the final segment of the design chain, the actual dwelling. Apparently, these architects seem to be following Hans von Foerster's ethical imperative: 'act always so as to increase the number of choices'. Nevertheless, by restricting the possibilities of increasing choices to their immediate practice, they ignore that von Foerster's dictum implies reaching the greatest possible number of people.

The paper concludes by discussing a few examples of interactive architecture and similar experiments in which buildings, instead of being obstacles, are thought of as occasions for expanding the number of existential possibilities. It is argued that this is achieved by an explicit adoption of second-order cybernetic principles, such as conversation and the inclusion of the observer, to complete the design chain and to avoid the ethical limitation of computational design strategies.

The Togetherness of Togetherness and Separateness: Enchantment and Disenchantment as Complementary yet Irreducible

Presentation (Paper Session C)
Colin J. Campbell
Time: Wed, 10:30am - 12noon
Venue: Chapel

I argue that the feeling that we ought to 're-enchant' nature is present and active both within 'ecological theory' broadly defined (e.g. in Alister McGrath's The Re-enchantment of Nature) but also in the broader environmental movement and even beyond it, in generalized ecological dreams and fears. The idea of a 'sacred balance of nature', a unity in which we are bound but that we have disturbed is an old one, but still fraught today with intense spiritual, moral and political anxieties. It is one that seems almost invariably to settle into dogmatisms on all sides.

Because of the immense complexity of an idea like 're-enchantment of nature' I argue it is useful to consider it first in broad outline in relation to its opposite, the idea of the disenchantment of nature. This cannot be a hermetic or universally valid distinction – there are very few thinkers, practically speaking, who could be said to be 'purists' of either stripe – but it remains a meaningful delineation or 'map', a general rule or tendency.

I propose, to begin, when we dream about the enchantment or re-enchantment of nature, we aim to experience ourselves as inescapably participating in the natural whole. When, on the other hand, I take the side of disenchantment, I emphasize the perception of myself as separate, of nature separated into parts, and of human beings as separate from it and each other. I use the phrase 'the togetherness of togetherness and separateness' in order to indicate that the positions of re-enchantment and disenchantment are ultimately complementary and not only dichotomous – or that their dichotomy in truth takes the form of complementarity.

We could say that the ultimate goal of 'disenchantment' ought to be the demystification of every last dogmatism, including the dogmatism of disenchantment itself, placing the activity of 'autonomous reason' within its larger natural context rather than elevating it to a universal, trans-natural status. Reason, in light of its very own disenchanting activity, is forced to accept something like what Varela, Thompson and Ross have referred to in The Embodied Mind as the 'enactivity' of cognition, that cognition is invariably embodied in a natural context. Complementarily, the ultimate form of 're-enchantment' is given in attention to precisely the particular differences we discover in analytical thought, that express in themselves the mathematical and experiential structure of nature itself (not in some unknowable spirit, substance, sacred balance or enchantment added to it externally).

Gregory Bateson And The Murderer

Presentation (Paper Session I)
Anthony Chaney
University of Texas at Dallas
Time: Thurs, 4:30pm - 6:00pm
Venue: Chapel

The nineteen-sixties were characterized by great sensitivity to the need for change. One argument – increasingly heated after the watershed year of 1968 – was where this change should be located: in culture or in structure; in ways of thinking or in collective action against the institutions of power. It was a question of praxis. During these years,

Gregory Bateson emerged as a public intellectual urging paradigmatic change in our underlying depictions of reality. He found a sympathetic audience, but also one pressed by the urgency to act. In a line of Blake's he often quoted, Bateson spoke directly to praxis: "He who would do good to another must do it in Minute Particulars." What did that mean?

Earlier in the decade, Bateson held a two-year correspondence with Clarence Edward Ashley, a man who, for much of that period, inhabited a cell on death row at San Quentin. The two came into contact through Bateson's role as consultant at Atascadero State Hospital, where Ashley was temporarily placed following his conviction for the rape and murder of a six-year-old girl. Bateson's relationship to Ashley might serve as an example, in Bateson's own life, of doing good "in Minute Particulars." Though he was under no professional obligation to carry on the correspondence, Bateson's letters to Ashley might be described as a kind of therapy by post. Yet culturalist answers to the question of praxis were vulnerable to the criticism of structuralists on precisely this score: to center change on ways of thinking was essentially quietist, and merely therapeutic.

Employing the critical methods of intellectual history, my paper will open up the central ideas contained in these letters and suggested by this relationship so as to generate discussion of these on-going questions concerning Bateson's thought in its historical and present-day contexts.

The Paradigm of Ecology in *Dune* and *Steps to an Ecology of Mind*

Presentation (Paper Session F)

Bruce Clarke
Literature and Science. Texas Tech University

Time: Wed, 3pm - 4:30pm
Venue: Nautilus

This talk will reflect on the remarkable circumstance that a key statement in Gregory Bateson's *Steps to an Ecology of Mind* repeats nearly verbatim a passage from Frank Herbert's celebrated science fiction novel *Dune*. Setting up this comparison so that the passage from Dune can echo meaningfully against Bateson's text, I will offer some historical and conceptual interpretations for this striking resonance. Both Herbert and Bateson inherit the stateside inflection on the shift in the discipline of ecology in the 20th century from a descriptive form of natural history to a theoretical systems science. Arriving in the vanguard of 1960s counterculture, in the name of the science of ecology, Herbert's fiction presents mind expansion and alternative communities in a context of global environmental concerns. Bateson carries out a comparable shift, from ecology as a natural-scientific metadiscipline on a par with cybernetics and specifically focused on the interrelations of life and environment, to ecology as a traveling concept, a mobile philosophical figure for any situation of systemic complexity and interdependence. In their own ways, both mark a particular cultural crest, when the discourse of ecology—ecosystem ecology in particular—is joined with its sibling discourse of cybernetics by thinkers crossing over from mainstream scientific ontology to the new epistemologies of the systems counterculture.

A Different Spin on Distinction

Poster Session

Art Collings

Time: Tues, 10:30am - 12:00noon
Venue: Chapel

This paper proposes to refine the concept of 'distinction' as expressed in Laws of Form, the mathematical logic work by G. Spencer-Brown. Laws of Form played an in influential role in the development of second order cybernetics in the 1970s via the thought of von Foerster, Pask, Maturana, Varela, and others. Laws of Form's influence can be attributed (in varying degrees) to its notation – which easily admits the expression of 'recursive' or 'reflective' forms; to its recognition of the role of the observer within the system being observed; and to the intuitive appeal of the concept of distinction, both as a mathematical idea, and as a ubiquitously familiar mental act.

The paper will specifically examine three different formal approaches, each of which is based on expanding the number of logical values from the usual two to the less typical four. First, a 4-value logic co-developed by Francisco Varela and Lou Kauffman in the early 1980s is considered, which is based on interpreting the 'extra values' as wave forms generated in feedback/reflexive systems. Second, a very different interpretation of 4-value logic from a 'modal logic' and lattice theory perspective developed independently by logician Nuel Belnap around the same time is considered, one which has extensive applications in resolving conflicts in artificial intelligence databases. These two interpretations are actually isomorphic, but there has been little if any exploration of the relationship between these approaches, especially in the bi-lattice literature. Finally, a new variation of 4-valued logic is considered, based on my own research. This logic is cyclic in nature, and consequently its four values are precisely analogous to the group of unitary imaginary numbers. It contains a complete copy of the

Kauffman/Varela logic, has application to 4-state cellular automata (in particular to the system of automata called 'recursive distinctioning'), and to other interesting areas.

The discussion in the paper is mathematical, but its themes can and should be understood conceptually and metaphorically in relation to the development of an "ecology of ideas."

A Second Order Cybernetic View of Modern Capitalism

Presentation (Paper Session G)
Ely Dorsey
Division of Mathematics, Science & Engineering, Bristol Community College
Venue: Chapel

This paper looks at modern capitalism from a second order cybernetic perspective. It reflects on the Recursion and Paradigms themes of the 2012 ASC Bateson Idea Group Joint Conference.

Modern capitalism is prescribed as a political economic system addressing the allocation and distribution of commodities, services and products linked to the well-being, survival and happiness of a population guided by the following structural characteristics:

- private ownership of land, capital, labor, information and technology;
- profit and utility maximization as the sole economic purposes; and
- evaluation and coordination of any economic activity by markets and prices.

It is hypothesized: *While other systems exist with similar characteristics, in modern capitalism, the market, redistribution and reciprocity population-economic wants and goods relations are shifted towards the dominance of the market evaluating its effects excluding social costs. This poses the nature of modern capitalism as amoral.*

We examine this hypothesis in eight parts: from Capitalism as System, through Cybernetic Epistemology and the Construction of Objects to Cybernetics as Moral Philosophy. We show that we cannot build an economic governance model from the structural characteristics of modern capitalism that is not free of moral contradictions.

We reflect on the challenges of acquiring money and the act of living. We use tools from radical constructivism, quality management engineering, general systems theory, Marxian epistemology, and the biology of love.

Picturing the Frame: Performing the Form

Workshop
Lisa Fay and Jeff Glassman
Time: Wed, 5pm - 6pm
Venue: t.b.a.

Following our live evening performance and taking that performance as the starting point, this workshop will reveal the inner workings of the pieces that were concealed by the performing. Hiding reveals, obscuring makes obvious – these and other counter-intuitive, stability-seeking phenomena create the dynamic tension we name live theatre. We will engage ideas through discussion, view working scores (graphic notations used in composing our movement based theatre pieces) and try out ideas with our bodies (embodying ideas).

While our pieces are imbued with humor and what seem like physical impossibilities, our concern is with the social implications that can be drawn from the work. The material of our work is decidedly small, analogue, acoustic and on a fine scale – leading to theatre pieces best seen in intimate settings where the seeming impossibilities are undeniably live. And as with animation, exacting composition and timing of each 'frame' is necessary for the whole to work. This scale is not trivial – neither in our work nor in considering social phenomena. Finally, our work is meticulous while remaining open to the surprises and insights of new form. We make in order to know something we don't yet know. We would like that this premise be our starting point for discussion.

The Having and Proliferation of Ideas: A Recent "State-Change" in the Idea of the Non-Trivial Machine

Poster Session
Thomas Fischer
Xi'an Jiaotong-Liverpool University
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

In the proposed paper I aim to use the Non-Trivial Machine as a paradigm to recursively explain a change in the idea of the Non-Trivial Machine. The described paradigm shift has implications regarding computability and regarding ethics in epistemological praxis, for example in the contexts of design and education.

I recently wrote about the Non-Trivial Machine (NTM), a hypothetical device invented by Heinz von Foerster who contrasted it to its counterpart, his Trivial Machine (TM) (von Foerster

2003, pp. 310-311). I discussed my writing with Ranulph Glanville, who himself refers to the NTM frequently in his own lecturing and writings (Glanville 2003, pp. 98ff.). In this context, some differences became apparent in the way von Foerster and Glanville describe the qualities of the NTM. This became evident when Glanville suggested that von Foerster "may have gotten the idea wrong" – a strange suggestion given that von Foerster himself invented it. In the proposed paper I will offer a description of the differences between both ways of understanding the NTM and speculate about possible reasons for these differences apparently having escaped Glanville (and possibly others). I propose to briefly introduce the TM and the NTM as described originally by von Foerster. I will then present how Glanville describes the idea, and describe the differences between von Foerster's and Glanville's descriptions of the NTM, as I was able to investigate them in my readings of von Foerster and in my readings and in my recent exchanges with Glanville.

Recursion in Language and Learning: What Autism Teaches us About Praxis

Presentation (Paper Session H)
Kathleen Forsythe
SelfDesign Learning Community, British Columbia Canada
Time: Thurs, 2:15pm - 4:15pm
Venue: Nautilus

Notions of languaging that arise from the Biology of Cognition, reveal several orders of recursion that emerge in the process of learning to speak. What happens when a child's neurological structure differs significantly enough such that the typical patterns of language development do not follow the traditional path? This presentation will present some ideas based on a case study of a child who does not speak yet is passing through these orders of recursion in a longer manner than a typical child. What kind of learning environment is needed to best support such a child's unique needs. Indeed, from a bioethical perspective, how can we tailor educational programs to each child's nervous system.

Experiencing an Integrative Observer

Presentation (Paper Session H)
Sebastian Gaggero Dávila
Escuela Matriztica de Santiago
Time: Thurs, 2:15pm - 4:15pm
Venue: Nautilus

This is an invitation for exploring what happens when we reflect about observing our observing that which we distinguish as culture, in a domain of reflection oriented to comprehend the role of language in social research studies. It is a reflexive invitation for seeing the simplicities and complexities about the nature of humanness that occurs in and through language, and about the conditions that the nature of structural determined entities such as human beings entail for our co-existence.
By seriously taking into account the comprehension of the Observer (as the distinction of observing our observing) I invite this reflection in a context of awareness of three different domains; namely Observer, observing and observed I claim that these three domains constitute our experience-existence-action as human beings that operate as observers making distinctions. Therefore, I propose to look at our human existence as languaging-sentient-observer beings that live in recursive dynamics of continuous transformations of their inner feelings, emotions and doings.

I am moved to make this reflection regarding the role of language in social research studies from my experience that self-consciousness about what we accept as the core elements in the configuration of the particular manner in which we to do things as a culture is fundamental for conserving those core elements, and consequently is what determines the particular manner in which a culture is realized by the persons who constitutes it.

Reflecting Between Understanding And Acting

Reflexivity Panel
Ranulph Glanville
Time: Tues, 1pm - 4:30pm
Venue: Chapel

We live by a model that tells us we should understand in order to act. Yet babies do the opposite: they act in order to understand. This is the key lesson that Piaget taught us. In a more recent cybernetic interpretation, acting and understanding form a mutually dependant circularity. What is important is what happens between them (their interaction) within the mind of the agent who acts and understands. I argue this is powered by reflection, i.e., deep, contemplative thinking. I will explore how this relates to Behaviours in my own Theory of Objects; von Foerster's recursive eigen forms; and Schoen's reflection in action. Finally, I will bring these ideas towards Umpleby's account of Soros' reflexive economics.

What is Matter? Never Mind. What is Mind? No Matter.

Workshop
Eric Graffman
Time: Tues, 5pm - 6pm
Venue: Chapel

What is the pattern which connects Gregory Bateson's large legacy, his "lonely skeleton of truth", with the best of philosophy and poetic insight?

The Cartesian dualism, or so-called Mind-Body Problem, can seem unreal or overcome since long. But we are still plagued by it daily; whenever we read a new article on which gene determines obesity or autism, or just where consciousness may be located in the brain. When we strain to fathom the frontiers of quantum mechanics; or wonder whether an allergy is mental or physical; or are tempted to believe in ESP and out-of-body experiences.

We are well aware of environmental degradation, but what do we know about the "pollution" of our minds, of our habits of thought? In Hawaii, 1969, Gregory said: "There is an ecology of bad ideas, just as there is an ecology of weeds, and it is characteristic of the system that basic error propagates itself." One such basic and central error is this persistent dualism; our difficulties to assume and keep hold of a primary unity of spirited matter, embodied mind, thoughtful passion, etc. So we need all the help we can get: from an eco-cybernetics with Bateson's epistemological clarity, as in his six criteria of mental process or Mind; and from non-dualist phenomenology and existential thought, complementing the systemic view and offering a meta-guide to therapeutic praxis. Perhaps even from poetry?

This workshop will proceed from a detailed study of how Bateson's definition of Mind, combined with other sources, offers an answer to "Descartes error". With help from the group we can move on to examine and enact our epistemological premises; for instance with a so-called Family Constellation demonstration.

Constraint and Flexibility in the Planning and Enactment of Education

Presentation (Paper Session E)
Dai Griffiths
Time: Wed, 3pm - 4:30pm
Venue: Chapel

The dominant paradigm of educational management separates planning (notably curricula and lesson plans) and enactment (interactions between teacher and learners in the classroom), while ignoring differences among learners and the dynamic processes of teaching and learning. The result is management of a surrogate system, since key interventions at the level of praxis are invisible at the institutional level. This appears dysfunctional, and would be expected to lead to disuse, or evolution to another form. Its stability therefore requires an explanation.

Bateson identified two 'great stochastic processes': "evolutionary change and somatic change (including learning and thought)" and maintains that a balance between genetic control and somatic variation maximises the flexibility of the individual. He also identifies mechanisms characterised by attenuation and time lag which enable the organism to "achieve by genotypic fiat those characteristics which the organism at the given time is already achieving by the uneconomical method of somatic change".

A lesson plan is, metaphorically, a genetic pattern (relatively fixed, and prescriptive), and the lesson itself a phenotype (more variable, and in interaction with the environment).

It is argued that the dominant paradigm is successful because sufficient 'somatic' flexibility is available in the classroom, and that there is a sufficiently strong feedback channel from 'somatic' practice to 'genetic' structures, enabling the latter to respond to changes in the educational and wider environment. However there are two concerns:

a) the significance of these two factors is largely unrecognised and undocumented within the dominant paradigm.

b) the ubiquity of computer based educational technology enables educational managers to exercise increasing control by means of:

i. enforced use of tools and environments
ii. orchestration of learning activities by computers
iii. use of data to extend the management of learning by targets and indicators

These concerns together threaten the 'somatic' flexibility required by praxis, and reinforce the 'genetically determined' control of educational policy and planning, forcing educational praxis to correspond more closely to the surrogate world of educational management. Largely undetected, this undermines the processes which have historically facilitated educational praxis within the dominant paradigm.

Legal Dynamics Far From Equilibrium: Towards A New Paradigm In Understanding Legal Change

Presentation (Paper Session J)
Hernando Gutierrez-Prieto
Time: Thurs, 4:30pm - 6:00pm
Venue: Nautilus

Up to now evolutionary theory and legal transplants constitute the mainstream doctrines related to legal change. Both of them lead to significant situation in which the theories seem to reach a profound limit. Evolutionary explanations of legal change are adaptations incapable today to explain "legal revolutions" in part because of their emphasis to Law and economics approach. Legal transplants have a great explanatory capacity but they usually crashed in real praxis especially in developing countries –like Colombia and other similar ones and its original proposal has been continuously debated. The paper includes some descriptions and analysis of both from a systemic point of view. It also assesses the role of analogies and/or metaphors in this discussion.

On the other hand, descriptions of legal change far from equilibrium (using an analogy to what Prigogine described as chemical changes far from equilibrium and to living systems) could seem more adequate to real life. This "new" conceptualization needs as a prerequisite to determine the meaning, extent and the discussion of the possible application of such a concept as "legal equilibrium". Its multiplicity, variety and the fact that it cannot be understood as a determined state are questions included in the paper.

This new approach could be useful in understanding legal revolutions as well as the permanent and systemic resistance to imported changes in normative orders without taking into account the system own history and dynamic values. In order to obtain a new envisioning in the current paradigm of understanding legal change we still lack of some intellectual tools –the most important of them being a concept of "legal equilibrium".

Architectural Design Education Between Poetry and Prose

Poster Session
Christiane M. Herr
Xi'an Jiaotong-Liverpool University
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

Humor, schizophrenia, religion, music, dreams and poetry can be described as areas of human activity whose expressions are characterized by a non-commitment on the spectrum that connects the prosaic and the poetic (Bateson 1971). Creativity seems to qualify for the same class, involving connections between the prosaic and the poetic. Designers regularly avoid commitment to either the prosaic or the poetic so as to allow themselves and others spaces necessary to cultivate and eventually realize ideas. Quite analogously, Glasersfeld (1998) describes mythical wisdom and rational knowledge as incommensurable, and shows how poets are able to make use of both realms and are experts in linking them. When conceiving rational models, scientists similarly need to draw on poetic imagination (ibid.), although this aspect of science is rarely made explicit.

Architectural education comprises both poetry and science and requires students to learn to move in between what Bateson calls the poetic and prosaic realms. The prosaic aspects of architectural education are typically taught in lecture courses, whereas students learn to deal with the connection between the prosaic and the poetic realms within the design studio, a form of education specific to design related disciplines. Within the design studio, students spend a large amount of time exploring, testing, discussing and reflecting on ideas, in close collaboration and dialogue with their teachers. In the proposed paper, I examine the establishing of links between the prosaic and the poetic realms by architecture students based on case studies taken from the specific context of my own practice as an architectural educator in China. In this context, an additional aspect of interest to me which I propose to examine within these case studies is the cultural aspect of perceiving the prosaic and the poetic.

Creativity from a Systems Perspective

Presentation (Paper Session J)
Andreas Hieronymi
University of St. Gallen
Time: Thurs, 4:30pm - 6:00pm
Venue: Nautilus

Some processes in individuals and organizations are called creative when something new is created that is useful or has some other kind of value. What kinds of mechanisms do creative processes have in common? To what extent do they work differently depending on the specific system and situation? This presentation takes a general systems approach using concepts from cybernetics, complexity theory and evolution theory in order to suggest some general elements of creativity. If a complex system is to survive and develop in a changing environment, it may need to build up new knowledge, form new skills and functions, or explore new territory. Creativity is considered a way to

change the usual iteration of processes and thus leads to new behavior. The initial starting point can be found at cognitive, emotional or physical levels, and can proceed through either bottom-up or top-down processes. However, if creative processes are to generate valuable long-term results, other processes such as evaluation of successful behaviors and remembering them, must also be included.

Following these theoretical questions, the presentation focuses on practical applications. To what extent can a simplified systemic model of creativity be used as a framework to discuss creative processes in individuals and organizations? Theoretical elements of creativity are transferred into recommendations for leaders and coaches to enhance creativity in their domains. This paper claims that a better understanding of what enables or disables creativity, explained in everyday terms, can help people to more effectively tap their creative potential.

Paradigm Shift Towards Systemic and Adaptive Governance: Praxis Relevant to a Structurally-Coupled Social-Biophysical System?

Presentation (Paper Session C)

Ray Ison
Communication & Systems Department, The Open University, UK; Systemic and Adaptive Governance Research Program, Monash Sustainability Institute, Monash University, Clayton, Australia

Time: Wed, 10:30am - 12noon
Venue: Chapel

The prevailing paradigm in the governance of the relationship between humans and the biophysical world is characterised by joint commitments to scientism and dualistic thinking. Currently governance, if understood as enacting cybernetic processes that maintain the quality of relationships between humans and the biosphere, can be seen to be failing on many fronts. Over the last 50 years, for example, the governance of water catchments, or basins, has been guided by commitments to "stationarity" encompassing commitments to linear causality, prediction and extrapolation especially within disciplines such as hydrology and water engineering. Momentum is now growing to address the limitations of this paradigm in the face of a worsening global water crisis that threatens security of supply and food production as well as loss of many vital ecosystems services.

This 'problematique' raises two significant questions for praxis: (i) what form of praxis might best contribute to paradigm shift in these circumstances? (a corollary of which is: Is the concept of paradigm relevant to such circumstances?); (ii) what constraints and possibilities does a conception of rivers as the structural coupling of two systems – the human and biophysical – offer to praxis innovations that offer an effective break with dualistic thinking and acting?

These questions frame a proposal for a systemic inquiry into forms of governance more suited to the contemporary circumstances of humans, and the growing recognition of the negative impacts of the Anthropocene, which those attending the session will be invited to join. While the focus is on water systems the inquiry purpose is to invent ways of acting in theory-informed ways (i.e., praxis) that gives rise to systemic and adaptive governance at levels ranging from the international to the program or project. The presentation (or workshop) will develop and build upon some of the revealing and concealing features of Maturana's account of structural coupling.

How Planning Meets Living

Poster Session

Timothy Jachna
The Hong Kong Polytechnic University

Time: Tues, 10:30am - 12:00noon
Venue: Chapel

A distinction can be drawn between two broadly conceived types of human action in the world:
…Plans, strategies, control, top-down, predetermination, formal…
…Situated actions, tactics, choice, bottom-up, spontaneity, informal…

The former type can be seen as the purview of authority and governance, the latter as the realm of habitation and life. Both types of practices are at play wherever there is a community of humans. From an urbanist perspective, distinctions can be drawn between different urban cultures in terms of the different ways in which these two broadly defined modes of action in the world interface with one another in the formation and use of urban public space.Plans propose physical and regulatory constructs with the intention of establishing platforms for the support of informal action, frames for the setting of acceptable limits of informal action, defenses to counter informal action, etc. Urban citizens perform public space, using planned structures for their intended purposes, appropriating them for other purposes, complementing them by operating within the gaps in control structures, etc.

The proposed paper will concern itself with the various different modalities with which these two types of action interface in the articulation of urban public spaces. Cases from actual urban situations will be analyzed and juxtaposed to elucidate the

variety of ways in which these two tendencies interface in cities, and an initial schema for categorizing the range of possibilities will be proposed.

Cybernetics and Metadesign: Modes of Embodied, Virtual, and Hybrid Communication

Presentation (Paper Session D)

Jher
Communication & Society, Institute of Cognitive & Decision Sciences, Center for Advanced Technology in Education, University of Oregon

Time: Wed, 10:30am - 12:00noon
Venue: Nautilus

This presentation draws upon cybernetics and metadesign to illustrate practices for embodied, virtual, and hybrid communication. What are the patterns which connect humans, environments, and machines? From first-order flows of information in systems, to second-order embodied interactions between an observer and system (autopoiesis), to hybrid third-order complex adaptive systems (virtual embodiment and embodied virtuality); what are the aesthetic and ethical courses that can assist in navigating rapidly transforming immersive environments? Acknowledging the enactions of analogue and digital domains, this presentation will illustrate how we can encourage sharing and collaboration between, across, and beyond, creative concepts and practices in art, science, and community. Conceptual and contextual frames that will be addressed include:

- transformations in intellectual property and identity schemas
- increasing immersion into the metaverse (open and proprietary)
- compelling need for re-engagements back to/with the lifeworld
- three-dimensional depth-sensor based cameras and systems
- hybridization of these environments and systems as mirror worlds
- notions of three-dimensional printing and fabrication
- the emergence of D.I.Y. (Do-It-Yourself) culture and maker spaces
- practical applications:
- free/open software and print-on-demand
- open source hardware and the Open Source Ecology project
- open source biology and remediation
- movements from sustainability based dialogues to thrivability based metalogues
- …and the emergent framing of the digital humanities…

As these concepts, practices, and enactments mesh at ever increasing rates, humanity will require ever-increasing agile ethico-aesthetics. This presentation illuminates how Metamedia at the University of Oregon engages the interfacing, networking, and transcending of disciplinary boundaries to enable flexible metadesign frameworks.

Time, Cybernetics and Technology: Recursive Visualisation and the Overcoming of Abstraction

Poster Session

Mark William Johnson and Paul Hollins
Institute for Educational Cybernetics, University of Bolton

Time: Tues, 10:30am - 12:00noon
Venue: Chapel

Computer technology, whilst responsible for generating huge amounts of data which can threaten to swamp institutions and individuals, can also provide rich ways of exploring and analysing data. This paper concerns the ‘embeddedness’ of time in the processes of engagement with technology, as data is explored for its meaningfulness over time and how data from such data explorations may itself be explored recursively. We call this recursive data exploration “Recursive Visualisation’. Drawing on techniques of ‘visual analytics’ we consider whether this might provide a way to help institutions identify meaningfulness in complex data and consequently to steer themselves more effectively.

We argue that the embeddedness of time in this process is important because it overcomes the essential abstraction of time in cybernetic mechanisms. We argue that whether a cybernetic mechanism describes the recursive process of observation (as for example, in Von Foerster’s conception of an Eigenform), or whether it describes ‘objective’ processes of communication and control in a machine, assumptions about temporal successionism and Humean causal thinking are impossible to escape. Here there are some fundamental questions to ask: How can there be difference without time? How can there be information without difference?

We consider these problems with some live examples of ‘recursive visualisation’ deploying interactive technologies of the real-time web and using data drawn from ‘learning analytics’ work in UK universities. We ask to what extent technology in framing an experience may overcome the problem of the abstraction of time in thinking about mechanisms. In particular, we consider whether the recursiveness of data exploration using technology

may help to reveal latent structures in data which may relate to its meaningfulness. Fundamentally, we ask whether technology will allow us to retreat from the need for abstraction in thinking about mechanisms, providing instead deeply recursive experiences of group reflexivity which may in turn be operationalised by institutions and societies.

Too Much Information!

Workshop

Mark William Johnson and Paul Hollins
Institute for Educational Cybernetics, University of Bolton

Time: Wed, 5pm - 6pm
Venue: Chapel

The purpose of this workshop on current developments in visualisation, real-time web apps and alternatives to cybernetic Abstraction is to introduce participants to fast-emerging transformations in internet technologies. As well as introducing and offering hands-on demonstrations of these technologies, the workshop will afford an opportunity to ask what these technologies might mean for cybernetic thinking and praxis. The technologies considered are:

1. Real-time feedback technologies using simple scripting languages (Javascript) and emerging standards (WebSockets) – particularly with the NodeJS engine
2. Graphical visualisation technologies which can integrate with real-time technology
3. AppStore packaging technologies for simple deployment of collaborative activity
4. Open Source hardware and its integration with the Real-time web

The underlying rationale for presenting these tools is to explore the ways that technology development and experimentation may be as important in cybernetic investigation as theoretical abstractions. In particular, the potential of these technological initiatives for providing new ways for the collective exploration of the meaning of information, and the consequent impact on collective decision-making will be explored through discussion and demonstration.

Technologies, whilst being the result of abstractions, provide experiences which, with real-time feedback, can be explored collectively in ways which are not possible with cybernetic abstractions alone. It is the role of technology as a bridge between abstraction and experience which is the focus of the demonstrations.

As the constraints of life are dominated more and more by the overwhelming information produced through technology, we consider the extent to which real-time technologies may provide a way in which experiences may be shared and explored recursively. It is in the recursive nature of this exploration that existing cybernetic theories of meaning (e.g. Krippendorff), cognition (e.g. Von Foerster, Maturana) and organisation (e.g. Beer) may be explored and presented in a practical way which may have efficacy in implementation in institutions and societies.

Hansel and Gretel for All Ages: A Cybernetic Approach to a Template for Recurring Dialog

Presentation (Paper Session A)

Faisal Kadri

Time: Tues, 1pm - 2:30pm
Venue: Nautilus

The fable of Hansel and Gretel describes the plight of two children over two types of threat; harm to their immediate survival and pain from hunger. The varying degrees of insecurity and the two contexts of self-preservation and feeding are evident from the flow of the story dialog, therefore an automatic re-playing of dialog can be realized by picking sentences from two lists; one containing sentences in the context of self-preservation, the other in the context of feeding.

Self-preservation is a motivation that exists in all ages; theory and Internet humor preference surveys suggest that sentences in the context of self-preservation have relatively constant preference with respect to age. In contrast, sentences in the context of hunger and protection of feeding turf were found to decline with age, reflecting the declining need for food which is highest in childhood while growing up then gradually falls with aging; people as they grow old will typically have other motivations. Same theory and surveys showed that sentences in the context of sociosexual relationships increased in preference until adulthood then declined with maturity. Also, sentences in parenting context, such as when caring for offspring, society and the environment were found to increase in preference with age and maturity and displace attention from feeding and sociosexual preference. Therefore in order to construct a recursive Hansel and Gretel dialog for audience of all ages, two lists of sentences are added to feeding: In sociosexual and in parenting context. The self-preservation list is paired with one of the remaining three; the three pairs form the sentence selection sources of three stages of age: Youth, adulthood and maturity.

The single thread story of Hansel and Gretel serves as template for recursive dialog, adding more sentences to create alternative threads and unbound possibilities for plots, thereby duplicating the story structure without repeating the narrative.

Reflexivity, Process And Eigenform

Reflexivity Panel
Louis H. Kauffman
Time: Tues, 1pm - 4:30pm
Venue: Chapel

Eigenform in the sense of Heinz von Foerster is often depicted as the result of an infinite recursion. In this view objects are tokens for eigenbehaviours in the long term action of a recursion, and self-reference occurs only in the limit of such processes. Self-reference is the hallmark of a reflexive domain or a self-observing system. On the other hand reflexive domains occur in the exchange of theories and processes in everyday life and language, far from such limiting processes. It is the purpose of this talk to give a model for the notion of a reflexive domain, and to show that self-reference and eigenforms arise naturally in the way processes interact finitely. Our modelling applies directly to self-observing systems and this point of view leads to an investigation of reflexivity in science, social science and linguistics as well as cybernetics.

Growing Boundary Objects: Among Transcontextual Feminisms

Presentation (Paper Session B)
Katie King
Women's Studies, University of Maryland
Time: Tues, 3:00pm - 4:30pm
Venue: Nautilus

Bateson found himself among people from a range of knowledge worlds as he traveled among communities academic, new age, religious, artistic, and entrepreneurial. Today we use the term transdisciplinary to describe such movements. (Thompson Klein 2004) How we know anything, Bateson famously said, means that in "the pronoun we, I of course included the starfish and the redwood forest, the segmenting egg, and the Senate of the United States." (Bateson 1979:4)

Not surprisingly communication tangles are something he endured, analyzed, humorously told stories about, and otherwise worked among reflectingly and recursively. His paradigm-altering work on double bind theory considered carefully how "both those whose life is enriched by transcontextual gifts and those who are impoverished by transcontextual confusions are alike in one respect: for them there is often a 'double take." A falling leaf [or] the greeting of a friend…is not 'just that and nothing more.'" (1972:272)

Such reflective analysis of "the transcontextual syndrome" inspired feminist theorist Susan Leigh Star, who, in a last essay before her sudden death in 2011, defined her concept "boundary objects" as "organic infrastructures" that address "'information and work requirements' as perceived locally and by groups that wish to cooperate." (Star 2010:602; Star & Griesemer 1989, Star & Ruhleder 1996, Bowker & Star 1999)

Feminists and Bateson-style systems analysts should find in Star's work an inspiration for practices for "growing" boundary objects, for inverting paradigms presuming that first we build consensus and then we can cooperate. Star offers us "steps toward an ecology of infrastructure" sensitive to anomaly. "Haunting social justice" are, she says, "the battles and dramas between… the standardized and the wild." (Star 2010:614) A recursive humor makes clear that the concept of boundary object is itself a boundary object….

Cybernetics Of Discourse

Reflexivity Panel
Klaus Krippendorff
Time: Tues, 1pm - 4:30pm
Venue: Chapel

I shall continue to elaborate on the cybernetics of discourse. To me, language use (social communication) is the master trope of ecology: multiple species of metaphors brought selectively in interaction with one another by communities of human actors, who coordinate their individual experiences while co-constructing and altering social and material worlds. Bateson had located mind in the circular flow of differences, involving human brains. I am less concerned with mind as a category but with how a variety of social phenomena, especially discourses maintain themselves in self-constituting linguistically mediated reflexive loops. Cybernetics is a discursive phenomenon and the artifacts that cyberneticians collectively construct, I would argue, need to be conceptualized not in observational but in reflexive terms.

Second-Order Cybernetics Action: Challenges For a Multi-Skilled Cultural Agent

Presentation (Paper Session E)
Graziele Lautenschlaeger
Time: Wed, 3pm - 4:30pm
Venue: Chapel

As a multi-skilled cultural agent at SESC – the Social Service of Commerce – I believe that Second-order Cybernetics could be used to find solutions to better understand and enhance the

effectiveness of our everyday work. SESC is a Brazilian private institution, created by the enterprise of commerce and services, it is a non-profit organization with national scope. SESC's actions are the result of solid cultural and educational projects which have promoted innovation and social transformation since its creation in 1946. Although it has been recognized for its efficiency in cultural action, the cultural agents of the institution deal with the sense of lack of permanence of their actions.

Considering Second-order Cybernetics principles – like recursion and the inclusion of subjectivity in the analysis process – I propose a review of our work flow, towards humanitarian and sustainable gain. For a sustainable approach to cultural action within the institution's rules we ought to start exercising self-criticism. Through the analysis of the role-shifting process we are used to working with within SESC, in a kind of second-order acting, the proposal is to check what changes over time from one circumstance to the next.

As a pilot analysis, I compare how cultural action is conducted in both the micro universe of a SESC unit, and the macro organization of a bigger event, involving all the SESC's units in the city of Sao Paulo, like the Mostra SESC de Artes. Mostra SESC de Artes is an annual event organized by the institution, which combines actions in different forms of artistic expressions in order to promote and disseminate Contemporary Art trends. We would like to figure out how we can build a structure to preserve potential and successful thoughts, projects, processes and knowledge – toward an ecology of ideas.

Self-Reflexive Systems

Reflexivity Panel
Vladimir Lefebvre
Time: Tues, 1pm - 4:30pm
Venue: Chapel

I introduced the concept of self-reflexive system in 1965. The essence of its definition is that such system contains the element which reflects the whole system and, at the same time, is influencing on it as on the entity. At that time, this concept was not cybernetic, it was rather anti-cybernetic, because it required the system to have a mental domain with the image of the self. Introducing the concept of self-reflexive system into scientific usage requested reconsidering the principles of constructing theories in the social sciences. In this field, unlike in the natural sciences, a theory about an object may influence this object, which destroys the truth of the theory. Besides, the theory may be constructed by the object and imposed on the investigator. I have discussed these problems with Karl Popper, and he called my approach dangerous for the scientific methodology. Mathematical methods constructed on the base of the concept of self-reflexive system are being used in psychology, sociology and ethics.

The Tyranny of the Prefrontal Cortex

Presentation (Paper Session B)
Jeremy Lent
Time: Tues, 3:00pm - 4:30pm
Venue: Nautilus

The human prefrontal cortex (pfc) is recognized as mediating the executive function which is the underlying driver of our human uniqueness: our ability to plan, conceptualize abstractions, make rules, and impose meaning on experience. This paper asserts that the effect of this pfc-mediated executive function on other aspects of human consciousness has become so overwhelming that it may be analogized more accurately as a tyranny than an executive function.

The unique evolutionary expansion of the pfc in humans combined with the dynamics of culture (itself a product of pfc activity) to create a positive feedback loop leading to an imbalance within the human psyche, both collectively and individually. Collectively, this imbalance manifests in our unsustainable use of natural resources to fuel exponentially accelerating material growth. Individually, this tyranny refers to our unreflective absorption of fundamental values that prioritize abstractions at the expense of other aspects of human experience.

Paradigm: This presentation introduces the discipline of "cognitive history," uncovering the layers of cognitive structures comprising our modern consciousness and investigating how they have evolved, through hunter-gatherer, agricultural, monotheistic and scientific paradigms, leading to our current unsustainable trajectory.

Praxis: Acknowledging this tyranny is the first step towards achieving re-harmonization within our individual and collective consciousness. Another step involves exploring alternative root metaphors for the pfc's role in human consciousness, such as "conductor" in an orchestra. The Taoist notion of wu-wei and the Buddhist conception of the self as a dynamically interactive process offer potential paths for achieving a "democracy of consciousness." These may be integrated with findings in systems biology and complexity science, to offer an alternative, scientifically integrated approach to meaning that could supersede the current pfc-centered dualistic tyranny.

Paradigms and Recursions That (Might) Generate a Praxis

Presentation (Paper Session I)
Jude Lombardi
Time: Thurs, 4:30pm - 6:00pm
Venue: Chapel

I will generate a multimedia presentation (video/lecture performance) that nests the concepts paradigm, recursion and praxis in ways that reflect my cybernetic experiences for understanding these terms. During the presentation I will explore the following questions:

- How do I define the terms paradigm, recursion and praxis according to a cybernetic way of thinking about such concepts?
- When might there be a triadic relationship (what does this mean) between the concepts paradigm, recursions, and praxis?
- How might the concepts paradigm, recursion and praxis generate a conversation about a society that I desire(s) to be an element of?

In regard to recursions, I will lean on the work of Heinz von Foerster in relation to Gertrude Stein's use of the term insistence, and turn toward Gregory Bateson when offering a distinction between the concepts recursion, repetition and redundancy. When talking about praxis, I will focus on how this term might relate to Humberto Maturana's concepts about Structurally Determined Systems when living in languaging.

As for the concept of paradigm, I turn toward Herbert and Marianne Brün for describing and making distinctions between the terms paradigms, models, assumptions and premise.

From Creation to Dynamic Co-creation: Developing a Cybernetic Lifestyle

Poster Session
Victor MacGill
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

Our experience is shaped by the worldview through which we see our world. The dominant paradigm of our world today is a reductionist, linear paradigm. While having many advantages, the reductionist paradigm is increasingly unable to provide the necessary framework to guide life in the 21st century. The reductionist paradigm has led us towards crises in such areas as the environment, economics, health and more that may threaten our very existence.

Among the alternative perspectives that have been explored to formulate a more effective paradigm is cybernetics. We investigate how cybernetics takes up this challenge and how to move from a cybernetic worldview to a cybernetic way of living.

The pioneers of cybernetics were well ahead of their time in developing a way of looking at the world in non-linear terms; accepting the inherent chaos and complexity in our world and looking as life in terms of flow and process. Cybernetics has the potential to assist people to make meaning from an increasingly complex and unpredictable world, so as to better cope with the challenges before us.

A cybernetic worldview enables us to see ourselves as partners in a dynamic co-creative process that looks beyond the many dualities we perceive in life towards an emergent synthesis of living in the gaps "in between". To live by such a life requires courage to break away from and avoid falling back into appealing old ways of being.
A cybernetic lifestyle might include embracing uncertainty, living a life that integrates our multi layered being, rethinking how we organise ourselves and how we orient ourselves towards the future. Cybernetics can help us navigate the possible pathways before us to create a better world.

Imagination and Action: Gregory Bateson's 'Ecology of Mind' as a Challenge to Philosophical Epistemology

Presentation (Paper Session B)
Simone Mahrenholz
University of Manitoba, Dept. of Philosophy & School of Art
Time: Tues, 3:00pm - 4:30pm
Venue: Nautilus

Professional academic philosophy is still in the beginning phase of dealing productively with Gregory Bateson. In particular his claim to present an "epistemology" comprises numerous challenges, forcing philosophy to critically reflect on several of their own fundaments. Among those are deeply entrenched distinctions, such as the either-or thinking-style (classical logic), science versus arts, logics versus aesthetics, linear causality versus feedback-circularity, praxis versus theory, emotion versus cognition, thinking versus perceiving, epistemology versus ontology, knowing versus learning, and even rationality versus spirituality.

All of these topics and relations, I want to claim, are holistically comprised in what Bateson calls an "ecology of mind". But what does that exactly mean? Its big overall impact can be roughly divided into at least two main aspects. First the idea of feedback or recursion, a productive circularity that transcends the (type-theoretical) whole/part relation. Be it in temporal or in non-temporal states

of affairs: whatever happens or whatever is "corrected" at a particular place has a recursive and holistic impact on the total of the involved features. And second: this 'systemic' view has considerable effects on our strategies in the face of dealing with problems: ecological, economical, psychological ones. If we take the (theoretical) concept of an "ecology" as a paradigm, the theory/praxis distinction evidently is bound to collapse – within philosophy as well.

The intended contribution wants to analyze and enfold the 'gifts' (meaning in German also poison…) that a paradigm-shift along the lines of the Batesonian idea of "ecology" has and apply them directly to innovation, problem solving and strategies of creativity. Using examples from sciences, arts or architecture, the lecture wants to demonstrate central 'logical' features of an ecological revision of contemporary epistemology and show in a concrete manner how this can lead to innovative forms of acting and understanding.

What Every Cybernetician Should Know: Huffman's Minimum Redundancy as Metaphor – "A Pattern that Connects"

Poster Session
August Mohr
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

"As the leaves are lit, so grows the tree."Alexander Pope originally said "As the twig is bent …" — a classic statement about conscious purpose and man's control over nature. But the real world works the other way around.

Minimum Redundancy Coding, more commonly known as Huffman Coding, is one of the underpinnings of Computer Science. It is used to create a tree-structure of binary choices to represent data and that data can represent just about anything."Huffman Code is one of the fundamental ideas that people in computer science and data communications use all the time", says Stanford's Donald E. Knuth, author of the multi-volume series "The Art of Computer Programming".

David Huffman, as a graduate student, solved a problem that had stumped minds like Claude Shannon, the creator of the field of Information Theory, and thereby earned his immortality in computer science. Where Shannon was trying to maximize meaning, Huffman abandoned the idea. Huffman's solution is amazingly simple and its fundamental tree-structured approach is truly a "pattern that connects". It has both technical applications and metaphorical implications that cover the gamut, including how we interpret our own lives.

Bateson said, "The major problems in the world are the result of the difference between how nature works and the way people think". Huffman's approach suggests that a quest for maximum meaning and first principles is not the way nature works. This discussion will describe and explain the original application of Minimum Redundancy, the coding of data according to its probability. This will be a non-mathematical description of the concept only. I will then stretch the basic pattern into other domains, some rigorous, some speculative. I welcome participation from anyone who has tree-structures to interpret.

Confusing the "Confusion Matrix": The Paradigm of Shannon Information Theory, Versus its Praxis in Sensory Science

Presentation (Paper Session I)
Lance Nizami
Time: Thurs, 4:30pm - 6:00pm
Venue: Chapel

Quantity of information flow in a system is a core cybernetics concept. It has been used frequently in Sensory Psychology since 1951. There, Shannon Information Theory was used to calculate "information transmitted" in "absolute identification" experiments involving human subjects. Originally, in Shannon's "system", any symbol received ("outcome") is among the symbols sent ("events"). Not all symbols are received as transmitted, hence an indirect noise measure is calculated, "information transmitted", which requires knowing the confusion matrix, a data-organizing tool, its columns labeled by "event" and its rows labeled by "outcome". Each matrix entry is dependent upon the frequency with which a particular outcome corresponds to a particular event.

However, for the sensory psychologist, stimulus intensities are "events"; the experimenter partitions the intensity continuum into ranges called "stimulus categories" and "response categories", such that each confusion-matrix entry represents the frequency with which a stimulus from a stimulus category falls within a particular response category. Of course, a stimulus evokes a sensation, and the subject's immediate memory of it is compared to the memories of sensations learned during initial familiarization, to make a categorization.

Categorizing thus introduces "false noise", which is only removed if categorizations can be

converted back to their hypothetical evoking stimuli. But sensations and categorizations are both statistically distributed, and the stimulus that corresponds to a given mean categorization cannot be known from only the latter; the relation of intensity to mean sensation, and of mean sensation to mean categorization, are needed. Neither, however, are presently knowable. This is a quandary, which arose because sensory psychologists ignored an ubiquitous component of Shannon's "system", the uninvolved observer, who calculates "information transmitted". Human sensory systems, however, are within de facto observers, who cannot therefore be uninvolved, making "false noise" inevitable in this experimental paradigm.

Thermodynamic Disequilibrium as the Original Binary Logic of the 'Local Order' of Human Meaning Systems

Presentation (Paper Session J)
L. Elio Porto
Time: Thurs, 4:30pm - 6:00pm
Venue: Nautilus

This article examines the emergence of human language and meaning systems through ecological processes and material events in the physical universe. Specifically, it 1) expands Michel Serres' notion about thermodynamics and the origin of language; 2) connects Schneider and Kay's ideas—regarding reduction of solar-energetic gradients by terrestrial ecosystems—to aspects of human meaning systems; and 3) builds upon the work of the Panarchists to include human meaning systems and language.

Life is contingent upon disequilibrium. Terrestrial ecosystems acquire and degrade solar energy or its derivatives thereby reducing the thermal gradient impressed on Earth by the Sun. Kay (1984) and Schneider (1988) call this "the thermodynamic imperative of the restated second law for open systems." Warm-blooded organisms (homoiotherms) must maintain a state of thermal disequilibrium (greater heat) with respect to their environments. Michel Serres (1977) posited that this thermal difference may be the origin of language (in an irreducible utterance such as "keep me warm"). I propose:

1. that the homoiotherm's requisite thermal disequilibrium produces a "local energetic order" characterized by the emergence of binary opposition as an ineluctable idea;
2. humans efficiently use this highly stable primordial idea (of duality/binarism) as an instrument to produce entropy—i.e., to identify, acquire, and degrade energy within its ecosystems; and
3. human language, and ultimately human consciousness itself, arises in origin from thermal disequilibrium.

Binarism is therefore a true gradient dissipator which has remained fundamental to and consistent with human evolution across various operations and stages, including non-dialectical, self-organizing, and autopoietic ones, since "the irreversibility demanded by [the] second law bespeaks a degree of causal openness" (Ulanowicz 2009). Thus, this binary process includes development of human meaning systems and production of languages, thoughts, ideologies, identities, and so forth. In producing such complex operations, the binarism of the Local Order yields to the cycles, spirals, and roundedness of the Medial Order—whereby the emphasis shifts from creation of entropy to maintenance of exergy. The Local Order also yields to the unknown and unknowable nature of the Permeative Order when the individual or collective organic system needs to recognize its fundamental interconnectedness.

Multiple Paradigms of Information within Cybernetics, in Theory and Practice

Presentation (Paper Session G)
Magnus Ramage
Time: Thurs, 2:15pm - 4:15pm
Venue: Chapel

In previous work, I have explored the history of cybernetics through an analysis of the way two of its pioneers (Norbert Wiener and Gregory Bateson) handled the key concept of information. I have suggested that Wiener and Bateson represent quite different paradigms in their treatment of information. In this paper, I will extend the analysis of the history of cybernetics viewed through the lens of information, and suggest (in line with other work on the interdisciplinary concept of information) that multiple paradigms can be observed in the treatment of information within cybernetics.

This analysis will be conducted through examining the approach to information of a number of authors, including Niklas Luhmann, Ross Ashby, Stafford Beer and Heinz von Foerster among others, and suggest that have they each have quite distinct views of information, separate from those of either Wiener or Bateson. My analysis will include the distinctive understanding of information within second-order cybernetics.

Information is of considerable theoretical interest within a range of disciplines (both those shaped by cybernetics and many others) but it is

also of great practical impact. Therefore as well as examining the theoretical paradigms of information, I shall also look at the praxis of information as impacted by cybernetics, and the way that can aid our understanding of these paradigms. Cybernetic treatments of information have had an impact in fields as distinct as robotics, artificial intelligence, digital communications, information systems, psychotherapy, and management science. By looking at the understanding of information in each of these fields, I will seek to deepen a sense of the relationship between information theory and information praxis.

The Current Status of Academic Journals in Cybernetics and Systems

Workshop
Magnus Ramage
The Open University, UK
Time: Wed, 5pm - 6pm
Venue: Nautilus

Kybernetes is a long-standing international journal in the area of cybernetics, systems and management science, which recently celebrated its fortieth anniversary. It published the proceedings of the ASC conference in 2010, and will publish the proceedings of this conference as well. The current editor, Brian Rudall, is standing down after a long and distinguished period of service, and is being replaced by a team of three from The Open University, UK – Magnus Ramage, David Chapman and Chris Bissell. This session has two purposes:

1. Magnus Ramage, the journal's new editor-in-chief, will talk about the new editorial team and their plans for the journal; and
2. To provide a forum for discussing the current status of academic journals in cybernetics and systems, whether they need to change and if so how.

Stranger in a Strange Loop

Poster Session
Wilf Rigter
PowerTech, British Columbia
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

This interactive demonstration with explore the beautiful constructs that emerge from the recursive process of video feedback. While video feedback does produce categories of pattern that have been explored by others such as Douglas Hofstadter, there remains the opportunity to discover new patterns and new video constructs that open the door to further exploration. Unlike digital simulations these explorations using an analogue system, are non deterministic in that the outcome can never be precisely predicted or repeated. Examples will be shown and there will be a hands-on opportunity for participants to explore the recursion within visual recursion using a simple set-up.

Behavior & Experience: A Non-Dualistic Model for the Material and Goal of Art and Design

Presentation (Paper Session D)
Daniel Rosenberg
Design & Computation, Massachusetts Institute of Technology
Time: Wed, 10:30am - 12:00noon
Venue: Nautilus

In this paper I explain the material and goal of art and design by distinguishing between the domain of behavior and the domain of experience. Behavior corresponds to the changes of a living system's corporal postures which an observer distinguishes as actions in relation to the environment (Maturana & Varela, 1998). Experience corresponds to the flow of living specific states of neural activity in a mutual correspondence between sensory-motor processes and body/medium's perturbations (Maturana & Varela, 1998). While behavior is a third-person description that an external observer distinguishes, for example stating that a person is sitting under a tree, experience corresponds to the first-person felt account of what is going on when sitting under a tree (Varela & Shear, 2000).

I argue that the current paradigms of art and design consider behavior explicitly and experience only tacitly, and that there is no clear correlation between the two domains. I propose a non-dualistic model or middle ground between behavior and experience to explain the material and goal of artists and designers. While the material corresponds to what the artist/designer manipulates while designing (process), the goal corresponds to what the artist/designer is trying to achieve with his design (product).

In the domain of behavior, the artist/designer manipulates objects (material) in order to shape others' actions, such as bodily postures, movements or expressions (goal). In the domain of experience, the artist/designer manipulates the felt perturbations of his body and his medium (material) in order to trigger particular sensations and feelings in himself and in others like him (goal). These two domains are complementary and interdependent because they cannot be explained without reference to each other: objects are lived, sensations and feelings are distinguished as actions. The artist/designer is manipulating perturbations by

distinguishing objects. The artist/designer is shaping others' actions by triggering sensations and feelings.

A new paradigm has to involve a non-dualistic model of correlations between the artist/designer as a third-person (observer) and as a first-person (experiencer). Art and Design are about observing and experiencing, about describing and feeling, about behavior and experience together.

Leges Artis, End(ing) of Life, and Compassion

Presentation (Paper Session H)
Maria do Céu Rueff
Universidade Lusíada, CEJEA/FCT, Centro de Direito Biomédico da Faculdade de Direito da Universidade de Coimbra
Time: Thurs, 2:15pm - 4:15pm
Venue: Nautilus

I will problematize medical performances at the end of life, confronting them with the responses of Portuguese Criminal Law. I will start from a review of literature, both in Portugal and abroad, by crossing the criminal doctrine with a broader, interdisciplinary approach, including the reconsideration of the medicine ethical tradition.

I will place my paper in a medical law integrative perspective, opened by authors like the German Eser (2004), who speaks about the specificity of the field characterized by a medical-legal approach starting from the centre, based on a (medical-legal) trans-disciplinary method and taking into account border sciences. Therefore, I will consider recent developments in neuroscience.

The frame of homeostasis (neurobiology of emotions) by Damasio (2003), with compassion in the top, helps to clarify to which extent medical act according to leges artis becomes the centre of the problem. Indeed, it is within the medical act, understood as the meeting of two autonomies – patient's and doctor's autonomies – that the compassion takes place, as a result of the agreement/compromise between the patient's will of ceasing her/his life in a situation of unbearable suffering and the doctor's duty to relieve that suffering. Compassion arises here as a "homeostasis instrument", that is, an emotion which is important in the regulation of life, even when we are speaking about end(ing) of life. This new perspective allows us to guess a shift of paradigm on the ethical and social levels.

On the other hand, in so far as we have passed from the compassionate response in medical setting to its discussion, successively, in medical ethics, in the courts, and as a normative instrument, I claim that we are before the "transition from an automatic homeostasis to a deliberate homeostasis" (Damasio, 2003). Therefore, I seek for a balance between the spontaneous and the planned, concerning the issue of praxis. Indeed, what increasingly happens in medical praxis should be brought together with theory, whereby cybernetics has a word to say.

Wallace Stevens: Complexity and the System of Self-Reference

Poster Session
GiTaek Ryoo
Daegu Haany University
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

This paper proposes a work of art as a self-organizing system, apart from the pre-modern understanding of art as representation or imitation of nature, examining Wallace Stevens's self-referential repetition, a metaphor-making mechanism, through the ideas of complexity and systems. This paper will show how his writing aesthetically embodies a changing scientific paradigm in the praxis of poetry. Steven's poetry reveals an infinitely bifurcated self-similar structure, an instance of fractality, in which each part of the structure resembles each other and the whole. This fractal geometry is created by predictable periodicity of certain patterns intermingled with unpredictable variation.

The constant movement of repetition is precisely what generates the creative natural force, which, in turn, provides the energy of the textual system to consistently self-organize and produce itself anew. Stevens' strategy of making it anew is particularly analogous to Prigogine's "dissipative structure," which maintains itself far from equilibrium through a series of bifurcations, and which also describes the autopoietic structure of a living system. Stevens' poetry organizes itself by means of an interlocking series of self-referential metaphors that generate contextual dependencies between similarities and differences of its terms.

In this way the entire network continually 'makes itself.' Stevens's poetry communicates not through the propositional content of its utterances, but by the structure of the self-referential system. The movement of circulation or repetition, for Stevens, is thus carried out "without human meaning, / Without human feeling" and without reference to any totality or external reality. Stevens constructs a reality not opposed to nature but, as William Carlos Williams put it, "apposed to nature," as it operates itself by the creative force of self-referential repetition.

Resisting Invitations

Presentation (Paper Session A)
Kate Slaymaker
Time: Tues, 1pm - 2:30pm
Venue: Nautilus

The intersection between that domain which I call art and that domain which I call society is rich in potential for social change. This potential goes unrealized when a work of art fails to become input into a social system.

Art does not effect social change simply by virtue of being presented as art. No causal relationship exists between art and society. Artists may intentionally enter into recursive relationships with society. I see a social need for the tending of these relationships. Cybernetics offers a language by which both artist and audience, as observers, make a difference by uttering their observations.

I would like to offer the role of social change artist as a container for constraint-based behaviors and strategies toward developing interfaces between art and society. One might call themself a social change artist when they:

- explore the relationship between invitation and perturbation,
- carefully craft invitations to enter into relationship with a work of art,
- work to resist an audiences understanding,
- offer and invite others to compose distinguishing descriptions of a work of art,
- formulate responses that engage common dismissals,
- work to lower the social cost of hazarding a guess,
- or invite conversation within the constructed system of a work of art, so that art be input into society.

This presentation, and accompanying paper, draws on the work of Theodor Adorno, Gregory Bateson, Peta Bowden, Marianne Brün, Martin Buber, Mark Enslin, Douglas Flemons, Max Horkheimer, Arthur O. Lovejoy, Nel Noddings, Susan Parenti, Larry Richards and Francisco Varela.

Reflexivity, Self-(Less)-Reflexivity, And Social Research

Reflexivity Panel
Fred Steier
Time: Tues, 1pm - 4:30pm
Venue: Chapel

Reflexivity, with its etymological roots in the “flecto” or shepherd’s staff, and as a bending-back on ourselves inherent in all of our knowing processes, has presented intriguing dilemmas for researchers. On the one hand, we have those who see the very idea of reflexivity as a threat to a desired objectivity, to keep the observer out of the story of knowing; on the other, we have those who embrace it as a way of allowing the story to focus on themselves, losing sight of the circularity at the heart of reflexivity. Both approaches are rooted in a non-cybernetic epistemology. I propose to explore a middle ground, rooted in extending Gregory Bateson’s ideas of recursion, context, and cybernetic explanation to allow for an ecological reflexivity. To do this I would like to explore what, in this context, a self-(less) reflexivity might mean in social research. Such an idea will encourage us to, paradoxically, juxtapose the responsibility AND humility of the researcher, and to celebrate the “muddle” (again, from Bateson) that this often entails. Illustrations from diverse research settings will be offered.

Obstacles To Reflexivity Theory In Economics

Stuart A. Umpleby
Reflexivity Panel
Time: Tues, 1pm - 4:30pm
Venue: Chapel

The dominant model in economics is equilibrium theory, which is based on an analogy to thermodynamics. The elements of the system are assumed to be rational profit-maximizers with complete information. When the system is disturbed, economists assume that it will quickly return to equilibrium.? As an alternative George Soros has proposed reflexivity theory, which assumes that the elements of economic systems are thinking participants. They observe, act, observe, act, and they have biases. This view is readily accepted by practicing managers but not by economists. There seem to be two main reasons why economists reject reflexivity theory. First, they are familiar with their current paradigm and resist change, as described by Thomas Kuhn. Second, they claim that reflexivity theory would encounter logical difficulties. This paper will review the logical difficulties anticipated, note that practical solutions have been available for a long time, and discuss several approaches to reflexive systems, which enable formal representations.

Language, Culture and Information: Designing a Greener Blogsphere

Poster Session
Monique Vandresen
Time: Tues, 10:30am - 12:00noon
Venue: Chapel

One of the realities of our day and age is that as communication and media prosper, discourse is experienced in a lot more places. Blogs provide a way for readers to examine environmental issues more completely and to form their own positions. The biggest green blogs now customarily attract more readers than most environmentally oriented print magazines. The free-form exchange among these bloggers and their readers has become an central part of the public dialog on environmental matters. Blogs are becoming a significant form of struggle for eco-friendly social equality and building of identities.

In this paper, five outstanding Blogs are examined, using Gregory Bateson's "The Roots of Ecological Crisis," in order to evaluate this relatively new media and its role in the larger needed ecological change. The aim is to discuss a present-day social phenomenon which is relevant to concerns of social process and the desires of many to change it. Blogs and traditional media can be analyzed as aspects of a social ecology. Suggests that new social movements and their blogs are a main factor in the reordering of the development debate and an important instrument on the search for alternatives to development. New social movements using the blogosphere challenge the semi—democratic political culture and bring new values, perspectives, methods and strategies to the political arena (Mainwaring and Viola, 1984).

Reflexive Thought-Ecologies: An Ethic of Praxis

Presentation (Paper Session E)
Will Varey
School of Social Sciences and Humanities, Murdoch University, Western Australia
Time: Wed, 3pm - 4:30pm
Venue: Chapel

In developing sustainability policy for large-scale social systems a continuing barrier to innovation is the capacity of the social system to discern its capability for prediction. Even with the most informed and expansive motivations, policy decisions for sustainability are made with the capacities held at the time of deciding. Effectively, there are limitations for the system in seeing the implications of its own actions.

A recent research project has asked the open-question: How to enable generative learning for large-scale systems of thinking? This paper reports on the results of that research. The study of 'conceptions' is proposed as a means to 'think about thought'. Using principles of psychological panarchy (drawing on ecological systems theory), a method for the visualization of complex thought-ecologies has been developed. In this approach networks of conceptions are depicted as three-dimensional representations of the ecology of thought in social systems. Essentially, this provides a means to walk around in the environment that is the garden of thought.

The development of this paradigmatic shift in epistemology generates consequential questions of ethics and praxis. The question asked is: 'What are the ethical implications of the proposed metonym of depiction?' Fundamentally, when a social-system is presented with a depiction of its own thought-capacities will it engage with the opportunity for learning by rejection, recognition or recursion? The outcome sought is to enhance praxis by using recursion as a process of generative reflection.

To prompt discussion, three categories of responses are considered: for Learning I, Learning II and Learning III scenarios. The different cybernetic configurations generate a matrix of alternatives for ethical praxis. This heuristic device provides one means to consider, when presented with reflexive learning opportunities, do thought-ecologies tend to contract, continue-as-is or co-evolve with their environments? Suggestions are offered for the praxis of how the visualization of the ecology of thought might enable adaptive and generative learning pathways.

Art as 'Phantasmagoria': Between Illusion and Reification

Presentation (Paper Session A)
Mário Vieira de Carvalho
Universidade Nova de Lisboa
Time: Tues, 1pm - 2:30pm
Venue: Nautilus

Stockhausen's infamous comment that the destruction of the twin towers in New York in September 11, 2001, was "the greatest work of art that ever existed" raises crucial questions about the relationship between art and politics, art and ethics, also on the very concept of "artwork". By focusing on art as a system of communication, I argue that the particular concept of artwork that is behind Stockhausen's aestheticizing of destruction corresponds to the radicalization of the "organic metaphor", which culminates by 1950 with Stockhausen's paradigm shift to the ideal of a self-

produced work of music (described in terms that are very similar avant la lettre to the concept of autopoiesis, coined by Maturana). Although produced by human labor, the artwork should emerge and act as if it was self-produced, "autopoietic", like an organism, a second nature.

The focus of the avant-garde on the work of music as a dehumanized, reified object, in this most achieved version, has its counterpart in the Western hegemonic paradigm of artistic communication (both of "high" and mass culture) relying on devices of "perfect illusion" and leading the spectator's or listener's feed back only to what is represented, not to the code of representation.

So different and opposed paradigms of communication are both asymmetric and characterized by a drastic reduction of complexity, in that they either radicalize the "pure aesthetic gaze" or "pure aesthetic listening", in terms of suppressing the structural coupling of art and life-world (its values, beliefs, emotional experiences), or they potentially expose the spectator or listener to manipulation, as if art had lost its autonomy as a communication system with its own code and dissolved entirely in its social environment. "Reification" and "illusion", by concealing the production process involved in the artwork, could be described as "phantasmagorias" (similarly to Marx's commodity fetishism). A cybernetic approach, by contrast, highlights the network of recursive processes involving all partners (including active, meaning-producing-listeners/spectators) and the truth-content of artistic communication (claimed by both Adorno and Bateson). It may, thus, contribute to better bring together artistic theory and praxis.

Designing What's Between the I and Nature

Presentation (Paper Session C)
Justin Vinston
Time: Wed, 10:30am - 12noon
Venue: Chapel

There is a recursive, co-creating relationship between the now predominant conception of nature and our global social and economic institutions. A conception of nature based on a severance between organism and environment both supports and is supported by those ideological models which place preeminence on separation between part and whole.

To design a conception of nature which treats the distinction between organism and environment as a recursive relationship is desirable since it reduces alienation between humans and their work, the product of their work, and their community (this entails a rethinking of what work is to be done).

There are inconsistencies in a relationship between this alternative conception of nature and the current practices and aims of environmental stewardship. Drawing connections between the predominant conceptions of nature, the development of modern technology and the seemingly imperative positioning of human as environmental caretaker may inform a reorientation to the task of environmental stewardship.

Throughout this paper, links will be drawn connecting the writers and thinkers Paula Gunn Allen, Gregory Bateson, Wendell Berry, R.G. Collingwood, Douglas Flemons, Gordon Pask, and Francisco Varela.

Toward a New Paradigm of Child Mental Health

Presentation (Paper Session H)
Marilyn Wedge
Time: Thurs, 2:15pm - 4:15pm
Venue: Nautilus

The theory and practice of family therapy is indebted to Gregory Bateson for many of its most useful concepts: the unexpected (and often unrecognizable) consequences of a change in a family system, pathology as residing in patterns of communication rather in individuals, metaphor as the language of complex systems, and specifically family systems, and transforming the paradoxes and contradictions (double binds)–present in all self-reflexive systems–into practical therapeutic tools.

This paper examines through case examples how each of these concepts informs the practice of family therapy, and answers the question: "Is a family systems/ecological construct more effective, less dangerous, and more in keeping with nature than the current mainstream paradigm of child psychiatry?" With seven million American children labeled with psychiatric disorders and taking potentially harmful psychiatric drugs, a more humane and respectful paradigm is urgently needed.

Moreover, there are serious social justice and human rights issues inherent in the current model of child mental health. Poor children are four times as likely to be medicated as middle class children with similar problems. And children's human rights are violated because labeling and medicating them deprives them of their childhoods.

Organizers

The Bateson Idea Group (BIG)
The Bateson Idea Group is a nonprofit organization which was formed to cultivate and engage in thinking as exemplified by the ideas of Gregory Bateson. It can be thought of as a matrix for anyone who is using Gregory Bateson's ideas to exchange thoughts and research. BIG offers a meeting place for people who want to discuss, and create, projects that fall under the wide reaching scope of "Bateson Ideas". BIG welcomes all disciplines, cultures, ages, levels of education and all "differences that make a difference" to join in this process. As Gregory Bateson's work has impacted many different disciplines, BIG was formed to provide ongoing educational projects that utilize and protect the Bateson materials and to assist in raising funds for their maintenance. The Ecology of Ideas conference signifies the emergence and premiere of BIG as an active nonprofit organization.

The American Society for Cybernetics (ASC)
The American Society for Cybernetics is concerned with the promotion of cybernetics as basis for an interdisciplinary discourse that propagates understanding of circular and reflexive systems, their designers', actors', observers', and investigators' roles, and how change affects all via interrelationship and interactivity.

The ASC thus affirms cybernetics' principles and values in any domain thus addressed. Our members have come from many disciplines including both natural and social sciences as well as philosophy and the arts. They are academics and practitioners, and they find both a commonality and surprising inspiration in their discourse.

The American Society for Cybernetics has been holding conferences on many topics since 1964. Given the rich diversity of ideas that are of interest to members of the ASC, the set of three interconnected themes of Paradigm, Recursion and Praxis serves as the focus for this conference concerned with the "ecology" of connections among ideas.

Conference Organizers
- Nora Bateson
- Pille Bunnell

Conference Committee
- Philip Baron
- Delfina Fantini
- Thomas Fischer (webmaster)
- Ranulph Glanville
- Phillip Guddemi
- Bob Helland
- Candy Herr
- Tim Jachna
- Lance Nizami
- Randy Whitaker