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Leonardo Reviews Quarterly 1.02 | December 2010

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THE INTERNATIONAL SOCIETY FOR THE
ARTS, SCIENCES AND TECHNOLOGY

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Leonardo Reviews

Leonardo Reviews is the work of an international panel of scholars and professionals invited from a wide range of disciplines to review books, exhibitions, CD-ROMs, Web sites, and conferences. Collectively they represent an intellectual commitment to engaging with the emergent debates and manifestations that are the consequences of the convergence of the arts, science and technology.

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Cybernetics: Art, Design, Mathematics — A Meta-Disciplinary Conversation

C:ADM 2010 — International Conference

July 30 – August 02, 2010, with surrounding events: July 29-30 and August 03-05
EMPAC: Curtis R. Priem
Experimental Media and Performing Arts Center
Rensselaer Polytechnic Institute, Troy, NY, USA

*Reviewed by Claudia Westermann
Vienna University of Technology, Austria*

Conferences often present a unique chance to become acquainted with the latest research in a specific field. Yet, the focus within the conventional set up is on the presentation of results related to a precedent research. In contrast, the international conference “C:ADM 2010 — Cybernetics: Art, Design, Mathematics” was an experiment in creating a framework capable of shifting the focus from results to process and, thus, in making the conference itself a laboratory for research. The event was held from July 30 to August 2 of 2010 at the Experimental Media and Performing Arts Center (EMPAC) in Troy, New York. Since the EMPAC has become well known for scheduling a unique and innovative program, it presented a good choice to make it the venue for a conference, to which the subtitle “A Meta-Disciplinary Conversation” explicitly suggested an intention to break with convention.

The conference was organized by the American Society for Cybernetics (ASC) in conjunction with the School of Architecture and the above

mentioned EMPAC at the Rensselaer Polytechnic Institute. It is due to the insight and understanding of the conference’s architect and always silently present steersman —Ranulph Glanville — as well as to the engagement of the other organizers¹ who acted on behalf of these various institutional bodies that the experiment in a participatory conference was successful in transferring the conversational model of meetings to a larger scale. A whole series of activities before and after the main conference was important in making the conversational format operate.

Weeks before the main event, the conference initiated online pre-conversations through its social network inspired web presence. The site, devised by Thomas Fischer was conducive in introducing the theme and the participatory framework. Preparations for the conference also included the creation of mobile objects — so called standards — that participants were asked to bring to the event. They were intended to serve as an additional entry to ideas and interests. On site, preceding activities included a business meeting of the ASC, a workshop on the state of cybernetics run by Stuart Umpleby, as well as tutorials in second order cybernetics. The latter were offered by members of the ASC and held in three parallel sessions. A workshop of three days was scheduled to succeed the main event. Participation in the workshop was open to those who were willing to engage in the preparation of a book dedicated to the conference and its outcomes. The framework thus introduced a flow of interactions that became more dense on the official conference days. It presented itself in the conceptual form of a

conversation.

As Gordon Pask described it, and Ranulph Glanville [2] has elaborated on, conversation is non-deterministic interaction. It carries the meaning of learning. The question however is: in which kind of space can it develop? How can this space be framed?

It makes sense to look at this question from the range of overlapping viewpoints that the organizers had defined as art, design and mathematics. Both interested in the borders and possibilities of language, art and mathematics in this context are to be found as counterparts in a space that was once designed to let them meet. Within the transdisciplinary space of second order cybernetics, which is essentially concerned with the inclusion of the observer into a feedback system, questions of designing are not exclusively related to the disciplines that range from architectural to information design. They are at the core of every activity. Accordingly, the aggregate of roughly 80 participants in the conference included researchers with a practice or educational background in mathematics, art and design, yet, also included designers in the wider sense, with a strong relation to other disciplines, such as management, physiotherapy, sociology and anthropology.

A welcome party, followed by a work in progress presentation by EMPAC’s artist in residence Lars Jan opened the main event. It gave a first and impressive idea of how the conference may be related to its site. Speeches including by the local coordinator Ted Krueger and by the EMPAC’s director Johannes Goebel elaborated further on this context on the next morning, and described the role of the

EMPAC as a place of initiation towards practice based research.

The conversational part of the conference began with a vocal rehearsal planned by Aartje Hulstein and Ranulph Glanville, and moderated by the latter. What started out as an exercise in singing changing vowels, and provoked in me for a short moment an allusion to ideas of peace in praise, managed quickly to make clear that this was not intended. With the task to catch the changing vowels of one's neighbor, the exercise evolved into a strange piece of music. Willingness to listen and to give space to the other is seen as an essential condition for conversations to take place and to make them dynamic events to be remembered. The playback of two longer exercises listened/sung in the concert hall of the EMPAC allowed for an astonishing insight into the compositional qualities of conversational activity.

The conversation sessions in principle followed the structure of the introductory exercise. A theme and a set of instructions served to generate a conversation which was followed by the (re-)presentation of the conversation. In variation to the introductory exercise, the conversations took place in smaller working groups, and the conversation-presentation-cycle was iterated once. This series of events was run through twice on the basis of two different themes.

Theme 1 was facilitated by Timothy Jachna, and started a set of questions related to the terms "actual" and "abstract": "Moving from actual to abstract is understood; but how do we move from abstract to actual? What are the relations between models that are conceptual,

computational and physical? How are the differences productive?"

In a short introductory talk, Paul Pangaro elaborated on this set of questions, and situated the theme within the history and theory of cybernetics. Thereafter, participants split into working groups for the afternoon, in order to refine the theme and to develop from it new questions. One or more members of the group were chosen to serve as rapporteur, and the group's results were later presented to all participants. The following morning session re-addressed the theme in the working groups and again the results were reported back to all.

Theme 2, facilitated by Christiane M. Herr, followed the same schedule. A talk by Albert Müller introduced to a set of questions related to "cross-over processes" and the "trans-, inter-, or meta-disciplinary subject".

This was the basic set up. It simulated a surprisingly facile access to a complex task. As a result, it was often astonishing how well the framing helped to generate meaningful conversations. The fact that the themes were not reduced to one basic question was most likely influential in allowing for the group conversations to take very different directions. The themes were well chosen to relate to the concerns of a theory of conversation, and it may be for this reason that they performed as an initiation to conversation. By all means, the framework led to a very intense conference, which engaged people to listen, to contribute, and eventually to change their point of view. Many of the (re-) presentations were entertaining, and theatrical in its best sense. They ranged from dances to decidedly neutral

reports, yet, never failed to communicate some of the groups' experiences. While the group conversations at times had not been without tensions, their presentations transmitted that at the end most groups had learned how to agree to disagree. The keyword "generosity" that Larry Richards once used, might best describe the atmosphere.

It is outside the scope of this review to address the particularities of the many questions and statements that were generated during the sessions. However, both themes generated some recurrent notions. Many questions related to theme 1 were about rules and how to play them. Theme 2 raised numerous notions related to language and metaphor. The material was collected on the conference's online blog and served as a point of reference during the ongoing sessions. In future, it may serve as a basis for further clarification of the means as well as the relevance of cybernetic activity in contemporary times.

The conference also included presentations that followed the conventional conference structure. They took place during the late evenings of the first two conference days, and also during one lunch break. Interestingly, within the context of the conversational event, there was a perceptual shift to the presentations. It seemed almost as if the themes that people engaged with could be regarded as tools to express different kinds of conversational energies. The contextual change made the presentations truly enjoyable as an experience in an altered point of view.

The sessions closed with a tour of the EMPAC, guided by Johannes Goebel. He gave a

detailed account of the building's planning and construction processes that had generated a whole new research related to the implementation of a performance technology, flexible enough to address the needs of the future. The conference dinner was highlighted by a speech of Ernst von Glasersfeld. His well constructed talk provided also for a summary of the past days. If "knowledge", as he says, "is and can only be built of concepts that we gather from our experiential world", C:ADM 2010 international conference provided in fact for a singular opportunity to get to know what Glasersfeld calls a "cybernetic principle": "having no fixed goal but being open to all the possibilities that come along".

The workshop that followed the official conference gathered 20 participants for another three days, in order to re-address the conversations, to discuss the outcomes of the conference, and to develop from the material, what may again become a source of inspiration for further research and experience. People engaged in all kinds of activities that might sound strange to those who did not participate in the conference. These included folding paper boats, as well as prototyping paradoxes, and exercising magic knot tricks with ropes. The latter were facilitated by Louis Kauffman. Lev Ledit used the time of the workshop to edit a movie from the material that had been recorded by Judy Lombardi during the conference. It gives an insight into the playfulness and the attitude of tolerance that guided this conference and made it successful in creating an experimental laboratory for research. Both this video and the dinner speech by Ernst von Glasersfeld, as well as many

other materials are available from the conference website ².

References

¹ See: <http://www.asc-cybernetics.org/2010>

² See: Ranulph Glanville, "And He Was Magic", in *Gordon Pask, Philosopher Mechanic*, edition echoraum, 2007.

Architecture & Biomimetics Series #3

by Dennis Dollens

(1) iPhone App.

BioDesign #3: A Pangolin's Guide to Bio-Digital Movement in Architecture 2010. Available via the iTunes Store \$0.99

(2) Comic Book.

The Pangolin's Guide to Bio-Digital Movement in Architecture 2010

ISBN: 978-0-930829-12-4, p.24
Site Books, Santa Fe, New Mexico

*Reviewed by Rob Harle, Australia
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This review refers to two separate forms of Dollens' latest contribution to the nascent art-science of biomimetic architecture. The first offering is in the form of an iPhone App, the second with similar content, is available in hard copy as a comic style book.

The iPhone is in my opinion a triumph of technology and engineering, the graphic/image manipulation capability is simply astonishing. Even if you are not especially into architecture, the beauty of Dollens' digitally grown images will enhance your iPhone experience, stun your friends and help in the preservation of the endangered little animal – The Pangolin.

The Pangolin is a small animal with beautiful scales, a little like an armadillo's size and shape. They live in Africa and in Asia where they are under environmental stress from

poachers who sell the scales on the black market. This comic book is dedicated to increasing research and protection for Pangolins. In the Pangolin's own words, "Grow Buildings! Reforest the Cities!" (p. 5)

The Pangolin's Guide was inspired by graphic novels and manga, hence the comic book style format. An unusual way to present serious sustainable architecture principles? Perhaps. However, as we are continually coming to understand, ivory tower academic research, locked away from the public's, scrutiny and input, is not the way forward to a sustainable global future. The lesson of a misinformed public, concerning genetically altered food, which resulted in the prevention of some possible benefits of this process should be noted. What better way to inform the general public about sustainable building than through the iPhone medium and comic books? Dollens decided to make his groundbreaking work available via these low cost mediums so as to, "...share proposals, inspire and to trigger future thinking and design discussion for the future development of bioarchitectural systems."

Dollens has been experimenting with bio-generative software, growing buildings and *printing* 3D architectural models for many years now. This has resulted in a number of previous books (1) most of which I have reviewed for Leonardo Reviews (see September 2003, January 2004; June 2005). His main software applications are Xfrog and Rhino. These allow him to experiment with, and generate new structures based on botanic samples, which result in digital hybrid biostructures. The concept behind biomimetic design is to understand how nature has solved problems, for