ANTI-ENTROPIC ROLE OF ART

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Abstract

This article comes from a presentation at the "Water is in the air" Workshop that took place at IMéRA in Marseille, France on June 25 – 26, 2012. It explores an *anti-entropic role of art* in the service of designing a better world. The vehicle for this journey is art and the steering wheel a concept of design-science developed by Buckminster Fuller. Using the example of my recently produced piece entitled "The Cloud", I am demonstrating a collaborative spirit of art and science through the process of creation.

"When I am working on a problem I never think about beauty. I only think about how to solve the problem. But when I have finished, if the solution is not beautiful, I know it is wrong."

Buckminster Fuller

Design-science is "a problem solving approach, which entails a rigorous, systematic study of the deliberate ordering of the components in our Universe" [1], in which 'systematic' means carried out in a methodical and organized manner; 'deliberate' means containing a purpose, and 'ordering' points to the anti-entropic function that I will discuss in more detail later on. In the concept of design-science, *design* is not a fragmented notion applied to specialized professions or disciplines such as graphic design, fashion design or interior design, but a creative process that lies at the heart of any human activity [2]. In fact according to architect Michael Ben Eli, all aspects of human activity are manifestations of the *design* process. In his lecture "Architecting the Future", he describes *design* as a process of realizing intentions that start from comprehensive goals (that come from experience) taken on the path of action towards realization, accompanied by the step-by-step (systematic) process of constant evaluation [3]. In the *design* process there is no such thing as failure because every failure becomes a departure point for new adjustments and resembles a spiral of evolution.

Eli asserts that *design* suffers when its intentions are narrow, when, as in our current bio-political system of capitalist democracy, we separate (banish) ourselves from the larger orders of life in the cosmos. Over centuries the tendency of narrowing focus has created specialized fields of production and has "ensured that we could not simultaneously concentrate on both the big and the small, the real and the symbolic, the human and non-human, the scientific and the 'vécu'." [4] Focusing on either the background or foreground we are not able to look at the whole picture at once. Narrowly defined intentions miss the sense of purposefulness such as "taking care of progressively more of what we can." [5] In the words of Michael Ben Eli "the purpose of design-science is to make world resources work for 100% of humanity in the shortest possible time through spontaneous cooperation and without ecological offense or disadvantage of anyone." [6]

Science is an important element in the equation as it plays the role of a monitoring agent. It provides the most rigorous and systematic method of verifying hypotheses. Michael Ben Eli interestingly points out that "one of the biggest follies of humanity is not being able to change a hypothesis in light of evidence to the contrary" [7]. We can think of Copernicus and the dogma of the church but also others. A further contradiction is the idea that we can change behaviour without altering the structure. Eli gives an example from cybernetics, where the behaviour in purposeful systems is interconnected with the structure of its systems. Therefore we cannot change behaviour without making necessary modifications to the structure. [8]

Art as an expression of human ability to be creative and critical acts as an anti-entropic agent. It helps us to zoom in on both the foreground and background at the same time and provides a potential to capture energy that otherwise would be lost. 'Entropy' is the thermodynamic property that referrers to the energy flow from higher to lower temperatures and defines the amount of energy not available to do work; in other words dispersed energy. In the classical interpretation entropy is associated with 'chaos' or 'disorder' and therefore an anti-entropic role of art consists of the ability of art to restore the order and to channel the energy that would be diffused. It is art that brings forward the 'imaginative' and it is science that monitors the process of realization of the 'imaginative'. It is the cycle, in which the monitoring agent does not exist without the imaginative and vice versa. As a matter of fact scientific hypotheses very often are the acts of imagination and very often art helps science to "see", to visualize and to understand these hypotheses.

In the process of ordering, human activities are part the self-organizing dynamic. In the article, "How big is "big"?" Peter Sloterdijk, using Fuller's metaphor of Spaceship Earth, proposes a radically different view of the occupancy of our home planet. He poignantly presents facts of our disconnected attitude towards nature and environment. The "idea of nature as the all-absorbent domain outside us" [9] that we can throw stuff at without any consequence, no longer holds together. Our "culture in which surfeit, extravagance and the luxury are granted as civil rights" [10] is no longer sustainable. In speaking of humankind's current predicament the philosopher Peter Sloterdiijk states: "We suddenly find ourselves compelled to accept the seemingly contra-natural idea that human praxis has transformed the terrestrial sphere as a whole into one big interior" [11] with no exit in case of emergency. The present crisis reflects living in fragmentation and represents a lack of understanding of reality, in which we are an integral part of nature. [12]

The idea of interconnectedness is the basic premise of my project - *The Cloud* (2011) that involves a large cloud-shaped structure with four inner bladders filled with helium, which allow the object to float in the air. Using multiple tubing and small hand pumps with one-way valves, people are able to push water from bottles underneath to an invisible water contraption compartment inside the cloud. Collected water adds to the weight and *The Cloud* descends. When water overflows, *The Cloud* "rains" becoming lighter and thus ascends.

I worked on *The Cloud* project with engineer Pierre Jutras. Originally my idea didn't involve water; the vertical movement of the cloud was supposed to be triggered by people breathing into it. However after discussing my idea with Pierre I learned that air wouldn't be heavy enough to control the movement and our attention switched to water. At this moment everything came together, the concept and technique became one and the piece started to have a life of its own.

The image of the cloud since ancient times has held profound meaning for the human psyche. "Symbolically the cloud form is as much a reminder of our loftiest aspirations and dreams, as it is of the gathering storm unchecked environmental deterioration has us riding straight into." [13] What interests me

Fig. 1 *The Cloud,* **2011, Video Stills, ©Ana Rewakowicz**

about a situation, in which an object depends on people's participation, is that it references a collective effort. Writer Bernard Schütze comments that the project's "poetically pragmatic rainmaking function offers a direct vision of how atmospheric conditions may be constructively impacted by sensitively thought out design." [14] He says: "Brought so close to view in our big interior this cloud leaves little room to evade the current condition: in this change of atmosphere we are now all weather makers of one sort or another." [15]

Over the last ten years I have been working with inflatable objects exploring the relations between temporal, portable architecture, the body and the environment.

A belief in new technologies as an opportunity for social transformation that had inspired the architectural groups from the 60's motivates me. And as much as it can be a delusion, according to Peter Sloterdijk "technology has not yet said its last word" [16]. He distinguishes between two kinds of technologies: *heterotechnology* and *homeotechnology*, "whereby the former relies on procedures for raping and tricking nature, the latter on imitating nature and continuing natural production principles at an artificial level." [17] The hope is that "by re-aligning the technosphere to meet homeotechnical and biomimetic standards" [18] we could arrive at a different type of interaction with nature.

In "'Air-condition': our new political fate," Bruno Latour describes how life support systems are interconnected from sphere to sphere. He explains how every sphere (including the Public sphere) has to be "generated, maintained, heated, lighted, furnished and preserved through a delicate technology of many intricate life supports."[19] Therefore every sphere matters. He said: "We travel from bubble to bubble, all the way to the

Global dimension, which is itself nothing more than a tiny bubble." [20]

Inspired by the image of modular bubbles, my next long-term research and development *Mobile LSS (Life Support System)* project will attempt to combine pneumatic technology with hydroponics - an ancient system of growing plants without soil that can produce high crops and be environmentally economical. Keeping in mind the principles of purposeful systems from cybernetics, where behaviour is directly related to structure, in my project my intention is to create a hydroponics modular system for symbiotic plant cultivation. In my installation, the well-being of the plants depends on participants 'donation' of Co2. In return the plants will produce oxygen and food beneficial to humans. This project will explore the possibility of using hydroponics in sustainable architecture and urban development as means of local food production and as an air-cleaning mechanism.

It is important to me to make my projects functional as much as possible, although functionality per se is not my primary goal. I see my artwork as a process of realizing intentions, in which a "failure" (to function) is just another departure point into new ideas. In this sense I see my process of art making similar to the process of doing scientific experiments – they do not always have to be 'successful'. My objective is to induce different understanding through the creation of various platforms of interaction. It is the intention to fabricate meaningful habitation that is the driving force behind my works. I am aware that my artworks cannot provide all the answers to such complexities as living in the face of dwindling resources, environmental catastrophe, and social displacement but I believe in the power of imagination and an anti-entropic role of art. I am equally inspired by the visionary works of Renaissance artists such as Leonardo da Vinci, as well as modern

inventors like Buckminster Fuller, who fused an imaginative sensibility with technical invention. I see my art practice as a bridge-building process between these two realms.

References and Notes

1. Michael Ben Eli (2010), http://vimeo.com/12808820, accessed November 20, 2011

2. Michael Ben Eli [1]

3. Michael Ben Eli [1]

4. Bruno Latour, "Air-condition: our new political fate", *Domus* (2004) <http://www.bruno-latour.fr/presse/presse_art/GB-03%20DOMUS%2003-04.html>, accessed November 15, 2011

5. Michael Ben Eli [1]

6. Michael Ben Eli [1]

7. Michael Ben Eli [1]

8. Michael Ben Eli [1]

9. Peter Sloterdijk, "How big is "big"?", *Collegium International* (2010), < http://www.collegium-internation-al.org/index.php?option=com_content&view=article&id=35%3Ahow-big-is-qbigq&catid=12%3Acollegium-%20collectivite&Itemid=20&lang=fr >, accessed November 25, 2011

10. Peter Sloterdijk [9]

11. Peter Sloterdijk [9]

12. Peter Sloterdijk [9]

13. Bernard Schütze, "Change of Atmoshpere", *Ana Rewakowicz. Here is not There/Ici n'est pas là-bas*, exh.brochure (EXPRESSION, Centre d'exposition de Saint-Hyacinthe, 2011)

14. Bernard Schütze [13]

15. Bernard Schütze [13]

16. Peter Sloterdijk [9]

17. Peter Sloterdijk [9]

18. Peter Sloterdijk [9]

19. Bruno Latour [4]

20. Bruno Latour [4]