

Some Art- Science observations: The need for Creative Friction.

Roger F Malina

The human senses are incredibly badly designed if their purpose were to help us understand the nature of the world. The senses filter almost all the energy that flows across our bodies, and we are blind to most of the content of the universe. We are like spiders living on our spider web, able to feel and know the web itself but the rest of space is beyond our ability to explore or know. Astronomers now realize that only 3% of the universe is of the same kind of matter as us. We are the aliens in the universe.

Physicist Claude Vellee, and musical collaborators at Ubris Studio, in their work “Cosmophone” extend our senses to detect the cosmic rays that traverse our bodies in the hundreds every second (1). The burst of energies from the formation of a black hole rivals the sublime of a sunset in Tyrol.

Einstein: “Our ideas are as independent of the nature of our experience, as our clothes are of the form of the human body”. (2) The human brain continues to mature until the age of 15 and more. Not only our cognition, but our intuitions, language, metaphors and myths are shaped by our experiences. Maturana: “All knowledge is conditioned by the structure of the knower” (3). To know something new, change your inside structure or your interface to the world beyond the body. Redesign your environment and the spaces you live in.

Minimaforms engages such questions in a multiplicity of approaches (4). Artist Rachel Mayeri has worked with primatologists and is creating art works for primates. She asks what would be “Primate Cinema” (5). Artist Stelarc views his body as a plastic medium, builds sculptures inside his stomach (6); he is ‘in’ the world differently. “Becoming Animal” is a large question.

According to Ramon Guardans we live in “bubbles” in space and time; his metaphor is that we live in a hole in the swiss cheese of space and time (7). Our cognition can only deal with very limited physical scales ( feel down to the submillimeter, mobility limited to kilometers), and very limited time periods ( our brains need more than 200 milliseconds to form a percept, our lifespan is only 70 years). We are trapped. To escape from this bubble, we need artifacts.

Artists Christa Sommerer and Lorent Mignoneau explore nano-sensuality by creating ways to touch and feel molecules (8). Nano Scientist Jim Gimzewski and artist Victoria Vesna sonify the molecular transformations when a pupae morphs to become a butterfly (9). The “Long Now Foundation” asks about culture on a 10,000 year time scale (10).

Artists who explore the art-science and art-technology terrain, as artists have always done, help build the experiences and environments that change who we are, physically and ontologically. Gyorgy Kepes during the 1960s at MIT realized that the new landscape provided by scientific instruments were as part of nature as Mont Saint Victoire was for Cezanne (11). I remember my father, kinetic artist and rocket pioneer Frank Malina, coming home from painting class and exclaiming: “I am tired of painting dead fish”(12). The universe, invisible to the naked human eye, became his new artistic terrain.

The artists who showed at Jasia Reichardt’s “Cybernetics Serendity” realized that computers were not accounting machines but symbol processing machines (13). Those working with Billy Kluver in the Experiments in Art and Technology group wanted their minds altered. Sound artists in the 1980s realized that the cell-phone was not a communication device but a jazz concert hall. Some important technologies though are not very useful for art making. In 1882 in Leeds, England , there opened an exciting Institute for Art and Technology; the new medium was linoleum. All that is left of “steam engine art” is “Steam Punk” and postcards and lithographs in Scotland.

Is there an ethics of curiosity? Most scientists would say no. Scientific curiosity is pure, driven by a childlike desire to understand ourselves and the world around it. The ethos of science subscribes to the universality of its findings, the impersonality of its results, the disinterestedness of the search. Validity is assured by intellectual integrity, organized skepticism, epistemic communism (2).

Most artists would say yes. Curiosity is inherently an ethical question. Curiosity is embodied, social, collective, culturally specific. It is enactive and individual. Sundar Sarukkai in his essay “Ethics and the Limits of Curiosity” quotes an eastern proverb: “the nature of the task of the “ought’ is the other-directedness of the “is”.

I do not believe that inter-disciplinarity is a discipline, nor do I believe in the desirability of a third culture. When working in the art, science, technology terrain we need creative friction.

## References and Notes

1. <http://cosmophone.in2p3.fr/>
2. See Sundar Sarukkai, Science and the Ethics of Curiosity, 2009: <http://www.nias.res.in/docs/Sundar-sci-ethics-paper.pdf>
3. Maturana, H. eta Varela, F. (1992) - The Tree of Knowledge: The biological roots of human understanding (Shambala, Boston and London).
4. <http://www.minimaforms.com/>
5. Rachel Mayeri: <http://www.soft-science.org/primate.html>
6. Stelarc, Stomach Sculpture: <http://www.stelarc.va.com.au/stomach/stomach.html>
7. Ramon Guardans and Nina Czegledy, Leonardo Journal, Vol 42, No 2, p 145, 2009.” Oriented Flows: The Molecular Biology and Political Economy of the Stew”

8. Christa Sommerer and Laurent Mignoneau: <http://www.interface.ufg.ac.at/christa-laurent/WORKS/FRAMES/FrameSet.html>
9. Jim Gimzewski and Victoria Vesna, Blue Morph: <http://artsci.ucla.edu/BlueMorph/concept.html>
10. The Long Now Foundation: <http://www.longnow.org/>
11. Gyorgy Kepes, *The New Landscape in Art and Science*. Chicago: Paul Theobald, 1956
12. Frank Malina Archives: <http://www.olats.org/pionniers/malina/malina.php>
13. *Cybernetics, Art and Ideas* Edited by Jasia Reichardt, 1971  
[http://www.senster.com/ihnatowicz/articles/cybernetics\\_art\\_ideas.pdf](http://www.senster.com/ihnatowicz/articles/cybernetics_art_ideas.pdf)