

Bringing the Forefront of Scientific Research to the Art Museum!

Akira Mabuchi

Designer/Art Director

The Marriage of Art and Science—Developments Leading up to the Exhibition

A unique exhibition entitled *The Marriage of Art and Science: Utsurobune*¹—Where Do We Come from and Where Are We Going?* was held at the Taro Okamoto Museum of Art, Kawasaki for some three months, from 15 October 2011 to 9 January 2012.

My involvement in the exhibition began with a request from the Taro Okamoto Museum of Art for participation in the planning of an exhibition for a certain up-and-coming new artist. The basic medium for this artist in producing his works was oil painting, but in what he ultimately expressed, the works released a mysterious energy that transcended the boundaries of the materials. Speaking of cultivating imagination in order to create, these works were created through a unique philosophy produced by capturing in the same dimension interests in various scientific thoughts—such as Big Bang cosmology, elementary particle theory, and molecular biology—as well as a spiritual sense, and then converting that philosophy into creative energy. In a preliminary discussion about the planning of this exhibition it was concluded that the usual exhibition format would not be

conducive to conveying this image, and a recommendation from the artist helped invite my participation. I had a strong interest in scientific images from the beginning, and in the same way, I was interested in the imagination of scientists as they advanced their research. It occurred to me that it would be interesting to place the fruits of the imaginations of scientists and artists in the same space—that is, the museum. Further, at the suggestion of a guest curator, the spatial sense of unity was enhanced through the participation of artists using scientific techniques in creating their works. As a result, the production staff was able to concretely share the image of a mysterious space in which works of art and scientific images are in perfect harmony, and this planning, with the basic concept of the *Marriage of Art and Science* was specifically launched.

How to Display Images—On the Science Installations

As the basic theme of the painter who was the center of this exhibition was *Life*, the themes for science installations were concerned with the *Universe, Brain, and Life Sciences*. This is because, taking a comprehensive view of *Life* as a genre of science, the images that naturally emerge are

questions of: *Where did life come from? What makes us live? Where do our emotions come from?* Specifically, we set as key concepts: *The universe—where did we come from? The brain—the thing that governs us. Cells—the things that make us live*, and tried them as science installations incorporating art reflecting the latest research results. Further, we asked people familiar with each genre and involved in some way with science communication to serve as coordinators. We established a system through which we were able to obtain the cooperation of the Institute for the Physics and Mathematics of the Universe (IPMU) and the National Astronomical Observatory of Japan for the universe section, and RIKEN for the brain and cells section.

With respect to the universe installations, by holding discussions held primarily with coordinators, as well as concerned parties from the IPMU, researchers of the National Astronomical Observatory of Japan and the University of Tokyo who also work as science communicators, and by analyzing video interviews with researchers and members of the IPMU made to determine the direction of the exhibition this time, we placed the emphasis of this exhibition on the imagination itself



Universe Zone Installation. A giant work, 250 cm top to bottom x 1800 cm right to left. Courtesy: Taro Okamoto Museum of Art, Kawasaki.

of researchers concerned with the beginning of the universe, splitting into three layers—comprising cosmic background radiation as the basis, the part that can be observed specifically in electromagnetic waves subsequently, and the previous part concerned with the beginning of the universe. Take, for example, one episode of *Dr. Hawking's 13.7 Billion Year Story of the Universe*, of the Cosmic Front science program on NHK BS Premium—although it aired after the exhibition. As seen in the intense debate among the researchers and Director Murayama in front of the blackboard, we were aiming to present replicating the field of research grappling with the mysteries of the universe through pure theory rather than through observations and experiments, and the imagination itself of researchers, as art at the exhibition. That is, to express the magnificence and

potential of human imagination and creativity, and to express the wonder of the varied capabilities of individual human beings. People are impressed with the figure of humans challenging the unknown to the limits of their abilities, and I believe it makes people interested viscerally.

Accordingly, no matter how incomprehensible formulas, graphs, conceptual diagrams, and theses may be to ordinary people, through the wonder of the human brain, we recognize shapes even in difficult formulas, feel that they are interesting, feel that they are beautiful, and from there we can expand images and draw inspiration. With respect to explanations based on the logic of the scientific world—however simple they may be, or however many analogies might be used to make them easy to understand—ordinary people are prone to reject them because of the characteristic scientific logic,

and it is hard to get them to accept these explanations. We therefore decided to have faith in the human ability to accept images and boldly use art without explanations. In the exhibition, we explored expression and space intended to be accepted as *interesting* for overall appearance—even if the respective images were difficult seen as parts—and aimed for *intuitive understanding*. Through artistic sensibility, we presented the scientific imagination as interesting, and conversely we tried directions of a broad range of scientific approaches that emerge from there.

During the exhibition, we were able to observe the reactions of visitors at the venue, or there were some opportunities to speak with them directly, and it seems that a lot of visitors enjoyed themselves as they peered at formulas and mysterious shapes drawn on blackboards.

This time, in lieu of scientific

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explanations used as captions in the installations (included in an illustrated book of the exhibition), we asked for the cooperation of a poet (who is also a scientist) as a means of trying another channel to stimulate the imagination. We also played music softly in the introduction part using a rare instrument called *hamon* (ripple sound) in the image of a *suikinkutsu*^{*2} aiming to make a spatial intimation.

Here, we introduce the poetry below.

In Closing—the Future of Scientific Information

This exhibition was a valuable experience through which I was able to put into practice the things that I had felt about conveying scientific information through visualization—something that I had been involved with for a long time. Based on this

experience, I found that however impossible it may be to accurately understand scientific theories themselves, I can understand them as images due to the nature of my work, so I am ever more determined to pursue graphics with the sensibility of art as a bridge to understanding.

Scientific information has become increasingly difficult. As seen in the growing expectations for the

Taro's Explosion

Yosuke Tanaka

In the beginning
There was Taro Okamoto

Art is an explosion
He said, standing with arms outspread

But it is invisible
Time-space swells
And now
As it has run up the slope of night

Mathematicians, cosmologists, physicists calculate
They tap equations into the blackboards at Kashiwa

Like a warm tide of blood
The blackboard is covered with every imaginable equation
Erased then rewritten
Written then re-erased

Even so, someday
Surely, they will arrive, to Taro's source

The unfathomable, invisible far side beyond time-space
The explosion that
For the first time
Purified the
Universe

(translated by Jeffrey Angles)



Part of the exhibition venue. The Cell Zone created in cooperation with RIKEN can be seen at the back. Courtesy: Taro Okamoto Museum of Art, Kawasaki.

roles of science in vastly expanded research, ethical issues of life sciences, and building a sustainable society, understanding among ordinary people of the significance of this research has become increasingly important, and efforts toward that end are vital. We need more than a single methodology—we must consider the variety of human sensibilities, and there must be increased mutual influence in *Art and Science*.

We enjoyed the cooperation of many people involved with science and art in our experiments this time. At the Universe Zone installation in particular, we received the active support of concerned parties at IPMU for our direction of installations that we want to put scientific imagination or the research results themselves, rather than incorporating the sensibility of illustrators and designers for techniques to form things that basically do not appear. Also, for further investigation of these techniques, we received wide ranging cooperation in discussions of how to make representations, interviewing with scientists, recreating actual discussions using blackboards, and more.

We are confident that it is this cooperation that produced depth in this exhibition and provided various imaginations to exhibition visitors.

(Exhibition data)

Title: Taro Okamoto Centenary Exhibition *The Marriage of Art and Science: Utsurobune—Where Do We Come From and Where Are We Going?*
Organizer: Taro Okamoto Museum of Art, Kawasaki
 7-1-5 Masukata, Tama-ku, Kawasaki, 214-0032
Dates: October 15 (Sat), 2011 through January 9 (Mon), 2012
Image cooperation: National

Astronomical Observatory of Japan; Institute for the Physics and Mathematics of the Universe, The University of Tokyo; RIKEN
Cooperation: Department of Arts Policy & Management, Musashino Art University
General supervision: Keinosuke Murata (Director, Taro Okamoto Museum of Art, Kawasaki)
General production/art direction: Akira Mabuchi (Designer/Art Director)
Guest curator: Ryu Niimi (Professor, Department of Arts Policy & Management, Musashino Art University)

(Editor's footnotes)
 *1 According to EDRDG's JMdict/EDICT Japanese-English Electronic Dictionary database, *utsurobune* is an unidentified craft said to have washed ashore in Ibaraki Prefecture during the Edo period (sometimes alleged to have been a UFO). Here, it may symbolize a journey of our imagination through space and time.
 *2 According to Wikipedia 日英京都関連文書対訳コーパス (Kyoto-related Japanese-English bidirectionally translated documents corpus), *suikinkutsu* is a decoration device in a Japanese garden that generates a sound like the *koto* (Japanese harp) with drops of water. More specifically, it is an upside down buried pot into which water drips through the hole at the top onto a small pool of water inside of the pot, creating a pleasant splashing sound.



A poster of the exhibition *The Marriage of Art and Science: Utsurobune—Where Do We Come from and Where Are We Going?*

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