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Exhibition of Super Clone Cultural Properties at Fukui Fine Arts Museum

There was an exhibition of Super Clone Cultural Properties of the Tokyo University of the Arts (TUA) at the Fukui Fine Arts Museum from 12 July - 25 August 2019. Many of the world's treasures were recreated using the technologies of the Clone Cultural Properties, including the Shaka triad statues; the mural paintings of the Silk Road such as the painting on the ceiling of the Great East Buddha of Bamiyan as well as the Fife Player by Manet.

As this exhibition was designed "to stimulate the five senses", visitors could take photographs and touch the works, in addition to experiencing fitting music and scent in many places in the venue. For the exhibition of the 57th cave of Mogao Caves, the display was designed in such a way that it looked as if the light was shining through the cave from sunrise to daytime. All visitors looked impressed as the sun dreamily lit up the clay figures and mural paintings inside the dark cave, and voices of admiration could be heard from adults and children alike. Many of the visitors were carefully examining the Clone Cultural Properties, in a setting that much resembled the local setting of the originating artwork.

There were many related events that took place during the exhibition such as lectures, workshops and gallery talks. "The secret of color" was a workshop to make crayons that can imitate an art technique called broken color. This was a technique used by Vincent Van Gogh, to place the different paints on the canvas next to each other, without mixing them first. When seen from afar, the eyes of the audience see a mixture of the different colors as one. The workshop participants made the crayon with "the color they want to use" in mind with two colors mixed into one crayon. When they drew a line the two colors appear and so it was a way for them to experience the technique of broken color. Many of the participants were school children on summer vacation who were interested in this technique used in the Clone Cultural Property of Gogh's self-portrait, and were seen working hard to make crayons with pigment and beeswax.



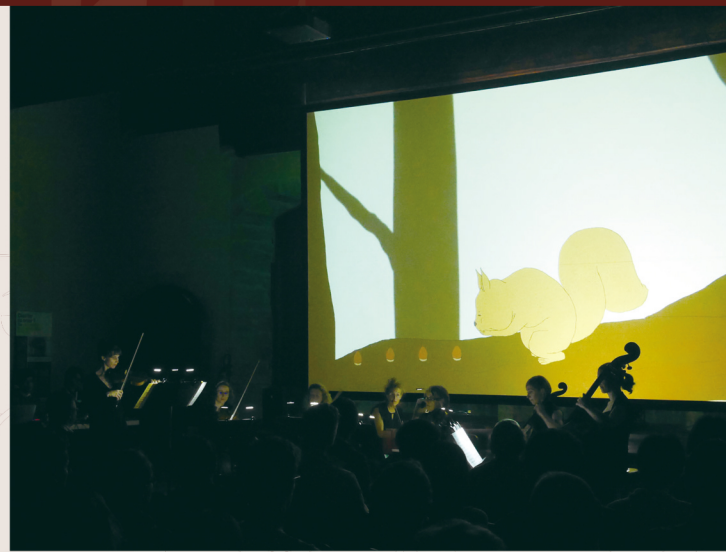
Tokyo University
of the Arts
COI Site

The Anney International Animation Film Festival 2019

The Anney International Animation Film Festival is said to have a certain status and has the longest history in the world. This year, it took place between 10 - 15 June and the whole city of Anney was surrounded by excitement of the festival. Every year at the festival, there is a program in which one country's animation culture is featured, and for the first time in 20 years, Japan had the honor of being chosen. The animators and technologies of the next generation from Japan were introduced to the world on the theme "NEW MOTION - THE NEXT OF JAPANESE ANIMATION" with Professor Mitsuko Okamoto, Vice President of the Tokyo University of the Arts, in the role of executive producer. There were 12 films by young animators officially selected for this, and one of them was an animation film by Ryoya Usuha, a Research Assistant in the Research for synesthetic media group. In the Japan booth, located in the center of the film market "MIFA", animations which were turned into VR, AR and games were also exhibited, in addition to the works by young animators. The Japan booth exhibited artworks and technologies that demonstrated the latest trends of Japanese animation.

In the castle of Anney, there was a solo performance of Vivaldi's "The Four Seasons" as a live animation concert which integrates an AI-based synchronization technology. This technology was jointly developed by Yamaha Corporation and the Research on synesthetic media group. This attracted a tremendous amount of attention, proven by the fact that there was a long queue of people wanting to watch the concert, exceeding the seating capacity of 250 people. Unique animation films created by four world-renowned animators were shown with orchestra playing in the background, which received a round of applause from the audience. Professor Takashi Kiriya, the Research leader of the COI Site at the Tokyo University of the Arts (TUA) commented "we were able to captivate the audience with our AI-based synchronization technology at the best animation festival in the world. That was meaningful in terms of expanding the area in which animation could be used too".

This technology is currently in its final stages of research to become a system that anyone anywhere can easily use. The integration of live performance and film will expand, and the day that becomes a new form of art is very close.



The performance of "Autumn" from Vivaldi's "The Four Seasons" (animation director: Mr. Atsushi Wada)



The castle of Anney, which was the venue for the live animation concert

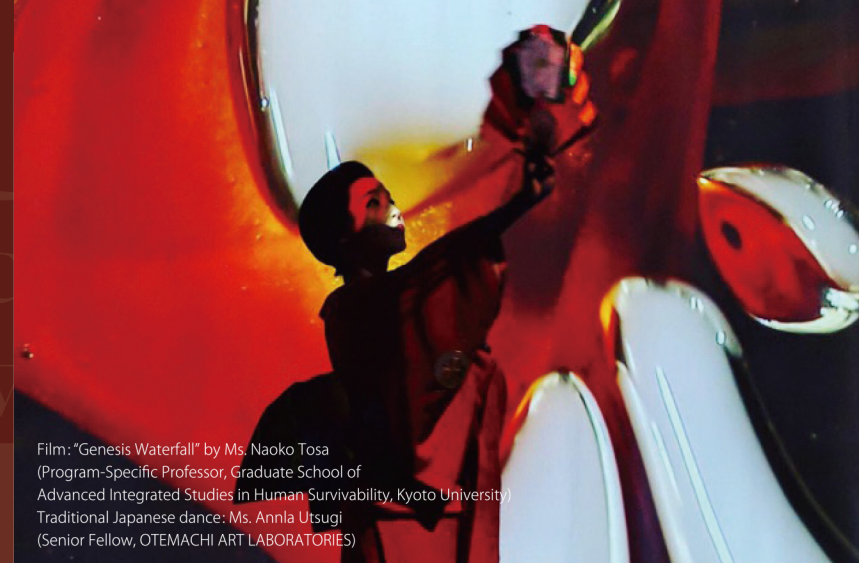
Workshop on expressing poetry with physical movements!

The Research group on inclusive arts organized an event at the Yokohama Municipal School for the Deaf. "Let's gather together for a dance workshop "the carnival of the animals"" on 1 August 2019. Some of the children from the school's elementary class participated in the workshop. "The carnival of the animals" is a musical suite by Saint-Saëns. In this workshop, children used dance to express creatures from the sea and the swans that appear in the poem by Mr. Shuntaro Tanikawa which he created based on this musical suite. Mr. Dakei, the instructor for this dance workshop is a graduate of the Tokyo University of the Arts (TUA) and is also deaf himself. Mr. Dakei commented that he wanted the children to feel and enjoy the tempo, rhythm and melody with their bodies.

The dance performance at this workshop was filmed by the Research on synesthetic media group of the TUA COI Site to be shown at the concert "Seven Senses Theatre" in December, along with the "sign dance" (physical expression of poetry using sign language) by Mr. Dakei.



During the dance workshop



Film: "Genesis Waterfall" by Ms. Naoko Tosa
(Program-Specific Professor, Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University)
Traditional Japanese dance: Ms. Annla Utsugi
(Senior Fellow, OTEMACHI ART LABORATORIES)

OTEMACHI ART LABORATORIES powered by GEIDAI COI

The Cultural Diplomacy and Art Business group of the Tokyo University of the Arts (TUA) COI Site set up OTEMACHI ART LABORATORIES in Otemachi PLACE, jointly with NTT Urban Development Corporation, in April 2019. To promote the creation of an innovative future city, live art experiments are taking place at the heart of Japan's culture and economy.

During the second phase (July-September), an art experiment to invent a sustainable form of traditional art took place titled "Creative Legacy - inventing tradition -". The venue was designed for the visitors to feel the changing nature of tradition through the object "Polygonium", a mobile furniture made of aluminum by Mr. Kengo Kuma, an architect, with randomized sounds of insects, rain and Japanese traditional music through the speakers. In the center of that, there was a traditional Japanese dance performance in front of a screen showing the film "Genesis Waterfall". Through this integration of the digital technology, the visitors were able to see a new form of artistic expression born out of tradition. Under the direction of Professor Junji Ito of this group who believes that "including the process of creating an artwork, everything is art", there will be further innovative art exhibitions to be shown in the third phase (October - December) which will be the culmination.

Making our activities even more inclusive



Project Professor,
Research group on inclusive arts

Oko Arai

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There was a high-school girl in a wheelchair with limb disability, trying hard to practice the piano with one finger on her right hand. Meeting this one girl was the initial reason we started our research project. Together with Yamaha Corporation, an automatic-playing piano "Disklavier™" with a function to play the piano accompaniment was developed by the Research on disabilities and expressions group (now called Research group on inclusive arts) to support her piano performance. This piano is now known as "Everybody can play the piano" designed for anyone to enjoy, whether disabled or not, and regardless of age or level. It is currently traveling across Japan.

Since 2011, the Tokyo University of the Arts (TUA) has been running an annual event titled "Disability and Arts" as a place for people to connect through art. When the COI Site was created at the TUA in 2015, an element of research and development in cooperation with companies was added to this event. So far, we have developed the following, which includes the aforementioned "Everybody can play the piano"; a workshop that supports children with developmental disorders "See the music, Touch the Light"; an app that visualizes the volume of music to help those with hearing impairment play music; a concert conducted in darkness by musicians with hearing impairment "Music in the dark"; a workshop to support children with hearing impairment "Opera for listening with the body". These have continuously improved every time and has been performed in many places.

So, how is "disability" defined? Disability can, in fact, be an advantage for artistic expression in some cases. For example, a musician with visual impairment will have no concerns about memorizing a piece because they do not learn the music by looking at the musical note. Similarly, a painter with intellectual disability can keep drawing in the same position for many hours because the brain does not retain the memory that they are physically tired. The realization that a disability can be an advantage has made us pursue the possibility of a more socially inclusive art form in our research of "disabilities and expressions". With 2020 just around the corner, there is much talk about "diversity" and "inclusion", and I feel that our research has been drawing people's attention these days.



Staff involved in the creation of "Everybody can play the piano"



Children engaged in creating a play with RoBoHon

the "chatbot" which can automatically communicate with humans through text, in order to understand an important theme in AI terms, the "Turing test". For the children to experience seeing the algorithm, which would normally be performed within a computer, 64 icons to instruct responses to the chatbot were arranged on the screen, and a corresponding database-like dictionary of each icon was prepared on paper. For instance, in response to a greeting such as "hello" from a human, the children would click the "greeting" icon which they looked up in the dictionary (database) and the chatbot will respond verbally from a choice of "hello", "good morning" or "good night". The children split into two roles within their assignment group to take turns in either being the one to talk to the chatbot or instruct the chatbot to respond. They were very engaged in creating many conversational patterns, and at the same time, the communication between the children also deepened.

The Children continued in the same group for the task that followed, which was to create a play based on a conversation between a human and "RoBoHon", a mobile robot with the ability to communicate. RoBoHon's script had been decided in advance, so the challenge was to think about the content, flow, combination and timing of the human part's script. At first, the children looked unsure, but they were working with each other to complete the play. While many of the plays were complementary to RoBoHon's script, one was a comedy with the RoBoHon and the human actor talking past each other, provoking laughter from the audience. In this workshop for acting with robots, there was an added element of role play using a chatbot. By making the computer communicate with humans, it is anticipated that it will help computers understand algorithm and nurture programming thinking.

Let's learn through acting with robots! - Mirai Summer Camp -

"Kids' workshop 2019" took place again this year around the Roppongi Hills area from mid-July. On 2 and 23 August, the Research on robotics & performing arts group and Benesse Holdings, Inc., jointly organized "Let's learn through acting with robots! Programming thinking and communication" for children between the ages of 8 - 15.

First, the children were given a task using a computer program called

Empirical research on the impact that art workshops have on children with ASD



Creation of artworks during the art workshop

The empirical study to verify the impact of art workshops on children with developmental disabilities (ASD in particular) is being carried out by Ms. Aiko Komagome, a Project Researcher, and others from the Research group on inclusive arts. Those with ASD (autistic spectrum disorder) find it difficult to gain social skills naturally, and there is currently no effective treatment available. In cooperation with Kanazawa University, Ms. Komagome and others are planning to analyze effects on sociality and changes relating to psychiatry, psychology and endocrinology, to make use of art workshops as educational treatment to improve social skills of children with ASD. This research project was selected under the "digital" category of the COI fund for young researchers for FY2019. The project is already underway, and in July and August of this year, workshops for children with ASD as well as TD (typical development) were conducted in Kanazawa, who were each tasked with creating animations with clay and paintings.

Innovation Japan 2019

Japan's largest business-matching event for industry and academia which draws more than 10,000 people every year, "Innovation Japan 2019" took place at the Tokyo Big Sight (Aomi Exhibition Hall) on 29 - 30 August 2019. Universities, ventures and SMEs from across Japan participated in the event to present and exhibit outcomes of their research & development. "Creating Innovation for "Synesensory" through Inspirational Art and Science & Technology" Tokyo University of the Arts' (TUA) COI Site had a small corner to exhibit within the organizer's booth "Area JST". The reproductions of the mural paintings from the World Heritage Site of Bagan in Myanmar was exhibited as a sample of Clone Cultural Property which integrates research in the fields of art, history and science to recreate even cultural DNA. In addition, there was a demonstration of the system to turn vital data into art, which is a system developed in collaboration with Ritsumeikan University as part of the COI Fund for Young Researchers. A variety of visitors from other universities, companies and government agencies came to our booth, and many of them looked very interested.

Visitors at the TUA COI Site's exhibition corner





Ogawa & Co., Ltd. is a participating member company in the COI Site of the Tokyo University of the Arts (TUA). It was founded over 125 years ago and is the oldest company in Japan specializing in fragrances. The interview took place in the company's laboratory in Maihama, and we asked questions about the joint projects between the TUA COI Site.

Executive Manager, Fragrance Business, Ogawa & Co., Ltd.

Ms. Hiroko Amma

What kind of business does your company specialize in?

Ogawa & Co., Ltd. produces and sells fragrances made of essential oils and natural extracts. In discussion with our clients (manufacturers), who require specific fragrances for food and cosmetic products, we create the right scent for their products. During that process, it is important for us to create fragrances from our clients' perspective as much as possible. In a process not dissimilar to how our clients create their final product, our company has test products and we create the right fragrances using these test products. For instance, in our laboratory in Maihama, we have the facility and systems in place to assess our fragrances, and it is possible to test them on a wide range of products such as shampoo; soaps; cosmetic products like toners; beverages including coffee, sparkling drinks and dairy; candies; tablets; sweets and cooked food. Assessments are very important, so in addition to conducting analysis on a special device, we also create assessment rooms similar to the environment in which the consumer would use the product (such as bathrooms in private homes), to ensure our products are in line with the requirements of the client manufacturers and consumers.

Recently, the demand for processed foods and cosmetics is increasing in East and South East Asia following the surge in economic growth in those areas. We have manufacturing and development hubs in Japan, China and Indonesia, and we develop new fragrances with our clients from Thailand, Singapore, Vietnam, Taiwan and Korea in their respective local offices. If the traditional foods and way of life are different, then the fragrances required also differ in each country. We are constantly expanding our stock of ingredients for our fragrances and have facilities and systems in place to accommodate the requests of our clients base around the world.

What are the essential tools in the business of creating fragrances, given it is something one cannot see?

In order to create something new that can't be seen, it is essential to communicate well with our clients by having long discussions. It goes without saying that we need to understand their requests by widening our vocabulary for expressing different types of scents, but it is also important to have a shared understanding of a specific image, such as an existing place, color or shape. To understand and create a fragrance as requested by the client is a necessity for a fragrance company; and to do that, we need both the knowledge of chemistry and great sensibility.

By trying out the different mixtures and balances of our ingredients, we build up our knowledge of fragrances. We also know that building up on our experience of scents by going to many places, encountering the different smells of people and objects lead to new ideas. We think it is important to input as many varieties of scents as possible in ourselves by trying out different scents.

How do you think the joint projects between the TUA COI Site and Ogawa & Co., Ltd. will develop in future?

Our joint work with the Research on culture sharing group has mainly been about creating fragrances for Clone Cultural Properties and choreographing the atmosphere in exhibitions with different scents. For example, we placed different scents at fixed points in the exhibition space for "SOSin-DENSin", which meant that sometimes the fragrances would mix in the air, so for the first time, the visitors could experience

a "mixed scent". We designed the space for the Clone Cultural Property of the Shaka triad statues from the Horyuji temple to smell of incense, and further into the exhibition space, the smell of cypress, a building material. When the two fragrances are mixed in the air, the intensity of the smell changes. It was designed so that the visitors would always encounter a different scent depending on where they stood and the timing of their visit. It was the first time for our company to deliberately design the mixing of different scents within one space.

Moreover, in the "Opera for listening with the body" organized by the Research group on inclusive arts, we used our fragrances for children with hearing impairment to enjoy opera. Our role was to create different fragrances for each of the characters from the opera for the children to smell, to help them understand the story better. In discussion with the teachers in charge, we considered the storyline and created the fragrance for the characters like the snake and the bird. We were surprised that most of the children were able to match the fragrance to the characters.

We believe our projects with the TUA COI Site are an innovation bringing together the knowledge of experts in their respective areas. We have participated as the expert on fragrance, and we are grateful for many opportunities we have received so far to generate new ideas. The power and possibility of fragrances are infinite, so we look to accelerate our research further on fragrances.

What does the fragrance of the future mean?

Sometimes a fragrance that no one has ever seen goes too far and is not accepted by society. Personally, I would like to find a fragrance that is slightly ahead of trend which is easily accepted by many in society. Fragrance resembles fashion, and the trend keeps coming back. But, not in completely the same way, there is always another element to be added if it returns in a new era. Our job is to predict the trend faster than anyone else, add a modern twist to it and suggest it to our clients. When they respond gradually in a positive way, it gives me confidence that I am catching the next trend!

Our company is keen to develop Japanese fragrances using materials found in Japan. Because all eyes are now on Japan, we feel it is timely to ensure our products are made domestically. To give an example, we have two types of citrus in Japan, the Citrus sphaerocarpa and the Citrus depressa. We have successfully commercialized the essential oils extracted from these with a focus on the scent. It is the first time for us to use these citrus as a fragrance ingredient, as they are originally categorized as food. There are a wide variety of diverse agricultural products in Japan, so our aim is to develop these "fragrances of the future" and export them worldwide.



Blending of fragrances in the laboratory