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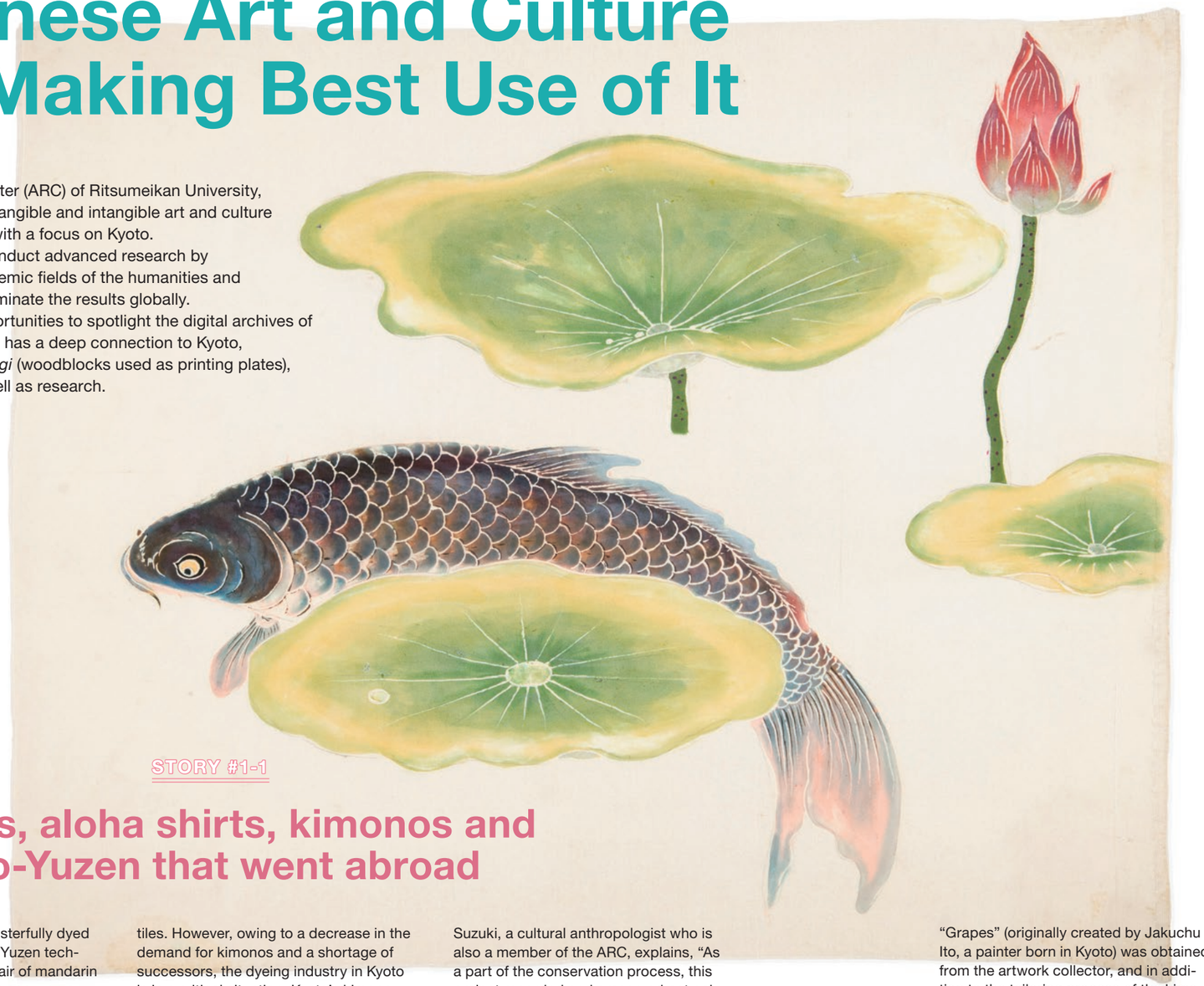
[Special Feature]

KYOTO

ISSUE 7
February 2018

Digital Archives Preserving Japanese Art and Culture and Making Best Use of It

At the Art Research Center (ARC) of Ritsumeikan University, we digitally archive the tangible and intangible art and culture that Japan is proud of, with a focus on Kyoto.
At the same time, we conduct advanced research by integrating various academic fields of the humanities and the sciences, and disseminate the results globally.
This story provides opportunities to spotlight the digital archives of the cultural heritage that has a deep connection to Kyoto, such as Kyo-Yuzen, *Hangi* (woodblocks used as printing plates), and digital games, as well as research.



STORY #1-1

Gowns, aloha shirts, kimonos and Kyo-Yuzen that went abroad

There is a kimono masterfully dyed in the hand-painted Yuzen technique, depicting a pair of mandarin ducks and reeds covered in snow on a white background, reminiscent of the crisp and cold surface of a body of water (see page 8). This was ordered by the ARC's research project team to investigate the current state of Kyo-Yuzen and for archiving purposes, and was produced over a period of approximately one year, starting in 2013.

Kyoto has long been leading Japan's textile industry, as represented by luxurious and gorgeous textiles such as those in Yuzen dyeing and Nishijin textiles. However, owing to a decrease in the demand for kimonos and a shortage of successors, the dyeing industry in Kyoto is in a critical situation. Kyoto's kimono production process is characterized by the division of labor, and the production of high-quality "made-to-order items" has been facilitated by specialized craftsmen with advanced skillsets for each stage of the process. In other words, difficulties may arise if production is interrupted in even one of the processes.

Considering this situation, the ARC has been promoting the digital archiving of documents such as Kyo-Yuzen design drafts and *katagami* stencils. Keiko Suzuki, a cultural anthropologist who is also a member of the ARC, explains, "As a part of the conservation process, this project recorded and preserved not only the kimono as a work of art, but also the process of making kimonos, the techniques and comments of the craftsmen involved in it, and the tools used."

In this project, from the production of its white silk fabric woven in Kyotango City, the selection of its designs, and finally to its dyeing and tailoring processes, each of the steps was ensured to be made in Kyoto authentically. For the project, permission to use the motifs of "Snow, Reeds, and Mandarin Ducks" and "Grapes" (originally created by Jakuchu Ito, a painter born in Kyoto) was obtained from the artwork collector, and in addition to the tailoring process of the kimonos, the dyeing techniques used in Kyo-Yuzen—such as *hand-painted Yuzen* and *stencil-printed Yuzen*—were meticulously recorded through videos, photographs, and interview surveys.

Suzuki, who is also conducting research on stencils, says, "It was a great benefit that we were able to research the connection between each process from a consistent viewpoint by recording all the processes of Yuzen dyeing." In the case of Kyo-Yuzen, in which very fine motifs

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Kyoto, which was formed over a thousand years ago, has continued to attract attention as the place where modern and traditional cultures merge. The Japanese government acknowledged its appeal as a center for the dissemination of the cultural power of Japan and decided to have the Agency for Cultural Affairs relocated to Kyoto by FY2021.

Researchers at Ritsumeikan University—which has campuses in three prefectures: Kyoto, Shiga, and Osaka—are studying, from various perspectives, what Kyoto has inherited over the generations, such as its historical arts and traditional industries, cultural assets, and the ways in which previous generations lived. Through these studies, these researchers are working towards discovering fascinating and new aspects of Kyoto as well as contributing toward furthering its development by making full use of state-of-the-art technologies and by interacting with local residents.

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Cover: "*Koto Gion sairei Shijogawara no suzumi*" (Cooling off at the Shijogawara during the Gion Festival in the Imperial Capital), Utagawa Sadahide, 1859, ARC Collection: arcUP2544, arcUP2545, arcUP2546.
This triptych depicts Kyoto at the end of the Edo Period. The central print depicts a bustle of people enjoying teahouses and the shows put up on the dry riverbed of the Kamo River on the night of the Gion Festival. Beyond the Shijo-Ohashi Bridge, one can see Mounts Hiei and Daimonji. In the south is Mount Inari, and in the north, one can see as far as Ohara.

are printed in various colors, it is said that dozens of stencils are employed to decorate an entire kimono with the motifs. The Yuzen kimono of this project is black and white, but it is made using 30 stencils. The completed stencils are numbered in order of dyeing and then passed forward for the dyeing process. Because of the perfect division of labor, those at the stencil-carving site usually do not know what colors will be used in the end, and certainly, the stencil carvers would hardly ever get to see the dyed kimonos.

Suzuki says, "While we knew the order in which each stencil was used, to witness the craftsmanship that goes into this process at the actual dyeing site, how they used those stencils and apply their skills in that production process gave us valuable insights that will be useful in furthering the research on stencils."

Suzuki explains that as "traditional" industries spread on a global scale, they affected the cultures and industries of other countries. She is interested in *the globalization of the kimono culture* through such *objects* as kimonos and stencils.

According to Suzuki, it is common knowledge that the Japanese kimono was brought to Europe in the 17th century by Dutch traders and became popular among aristocrats. This kimono was known as "*Japanse Rokken*" (Japanese gown) and was mainly used indoors as a gown worn over clothes. "Material culture was given various meanings depending on the understanding and interpretation of the people in each country where it was introduced; there are cases where unique developments can be seen. It is interesting to follow such ways of understanding, for example, how to understand different cultures through the kimono."

Suzuki's research also found that multicolored, gorgeous kimonos that were skillfully crafted were popular among Westerners, and made their way to foreign lands in various ways. In addition, Kyo-Yuzen fabrics with glossy patterns were exported before the war and were used to make aloha shirts, which are a special Hawaiian product; and the "Happy (*happi*) Robe," a variation that makes it easier for foreigners to wear kimonos, has been popular as a souvenir for foreign tourists, visiting Japan.

More recently, Suzuki, who has also researched Yuzen dyeing firms, discovered the existence of Yuzen works that were created immediately after the Second World War. While the demand for expensive kimonos dyed using Yuzen techniques reduced due to a lack of supplies, in the dyeing industry of Kyoto, parachute fabrics, which became available in the market after the war, were dyed with various designs and made into souvenirs for the soldiers of the Occupation Forces; Yuzen dyers helped out their living with this practice.

"It was accepted abroad because it was an advanced technique. It seemed as though the traditional industries, such as that of kimonos, had demand only in Japan. However, in reality, there were many things that were highly competitive internationally," says Suzuki. When looking at the situation on a global scale, we may see a breakthrough in the revival of the textile industry of Kyoto, which is currently said to be in decline.

Keiko Suzuki

Professor,
Kinugasa Research Organization

Subject of Research: visualizing others in Japanese popular art from Edo to early Meiji, material culture, cross-cultural exchange focusing on visual culture, cross-cultural understanding

Research Keywords: cultural anthropology, historical anthropology, symbolic anthropology, visual culture, cultural studies, art history, museum studies, representation, material culture

Yuzen dyed works from the collection of Miyoshi Senko, Inc., a Yuzen dyeing firm in Kyoto. Immediately following the Second World War, silk parachute fabrics became available on the market; it is said that they were dyed using the hand-painted Yuzen technique and were popular as souvenirs for the soldiers of the Occupation Forces. (Also seen on the previous page.)

Picture by Toyokuni III, *Nijūshi-kō imayō bijin chanoe zuki*
("Twenty-four Enjoyments of Beauties of the Present Day, Fond of Tea Ceremony")
(1863, ARC collection, arcUP6633)

The same *hangi*
(ARC collection, arcMD01-0657, mirror image)

STORY #1-2

Tracing the footprints of printing blocks to discover the publishing industry of the Edo Period

The invention of printing technology dramatically changed the amount and spread of information transmission. What is known as the oldest printed material in Japan is the 8th century *Hyakumantō Darani* ("One Million Pagodas and Dharani Prayers"). It is the oldest printed material in the world as an object with a verified production period.

What was mainstream in Japan until the Edo Period was no means of movable types printing but woodblock printing, which consisted of carving letters and illustrations on a wooden block (*hangi*), put the black ink (*sumi*) on it, and then placed paper on top of a block, printing it onto paper by rubbing. "Thanks to woodblock printing, which made possible the printing of a large number of repetitions, publishing became commercially viable, and the publishing industry expanded instantly. It can be said that cultural matters in the Edo Period, such as thought, religion, academic studies, and entertainment, as well as literature, could not be described without the *hanpon* (books printed from woodblocks) made by woodblock printing. The majority of *ukiyo-e* (prints or painting which reflect the popular culture in the Edo Period) that Japan boasts to the world are multicolor prints using woodblocks." Takaaki Kaneko, who said this, is an unusual researcher who focuses not only on *hanpon* itself but also on *hangi* for printing.

"*Hanpon* bibliography and study on publishing, which focused on physical 'things,' are indispensable for research on early modern art and literature. Nevertheless, there is definitely a lack of information about *hangi*, which have a prominent part of it," Kaneko said. One of the reasons is the difficulty in handling *hangi* materials. They are not widely used for research because the original number of *hangi* is overwhelmingly lesser compared with *hanpon*, and there are almost no reproduced materials. Kaneko is trying to solve this problem by using digital archives.

"[Between] Edo (Tokyo) and Kamigata (Osaka and Kyoto), which were the center of the publishing industry during the Edo Period, Kyoto, which escaped fatal damage from earthquakes and wars, is the only one where many *hangi* still exist. One cannot expect to enhance the archive without the location of Kyoto." Kaneko, who said this, digitalized about 5,800 *hangi* materials managed by Nara University as part of an ARC project and released the digital archives on a website.

Lighting is crucial in digitalizing *hangi* with a surface covered with *sumi*. After three digitization trials, Kaneko and others adopted a bird's eye imaging method using a digital single-lens reflex camera. In addition to shooting with flash from the front of the photographic subject, they captured the three-dimensional unevenness of the surface of the *hangi* from four directions using oblique lighting. They took a total of 20 cut images per *hangi*. After building an archive of images totaling 90,000 cuts, they are currently promoting the digital preservation of *hangi* owned by publishing houses that used woodblock printing in Kyoto from the old times, such as Hōzōkan and Unsōde.

"A trace of the thought of publishing houses and craftsmen appear on *hangi*, from which the existence of the early modern publishing industry has come to be understood to a great extent." Kaneko discussed the necessity of research on *hangi*. For example, it has been known for a long time that *ireki* (wood piece inlay) was put on woodblocks when it was necessary to modify the content of the *hanpon*. *Ireki* is a technique of carving out parts of a character that should be modified and incorporating the newly carved piece. Even in the bibliography for *hanpon*, *ireki* has long been regarded as a technique for making corrections, but research by Kaneko reveals that this is a misunderstanding. Kaneko said, "It turned out that *ireki* was not necessarily carried out only for corrections; it was also used in situations such as when there were wood knots on the board and it was difficult to carve it, such knots were removed and replaced with *ireki* in advance; or in case of difficult characters and *kunten* (guiding marks for rendering Chinese into Japanese)." Such things cannot be understood only by looking at the *hanpon*. Facts that overthrow the common knowledge of the bibliography have been revealed by examining the *hangi* in detail.

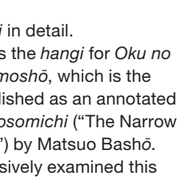
Oku no Hosomichi Sugagomoshō (1778, ARC Collection, arcBK02-0256).
Parts posted are the cover of the last volume, namely, the back-side of page 11 and the front-side of page 12, the two facing pages of the last volume.

The same *hangi* (ARC collection, arcMD01-0714, partial, mirror image); the part posted is from page 11.

ARC possesses the *hangi* for *Oku no Hosomichi Sugagomoshō*, which is the oldest one that published as an annotated edition of *Oku no Hosomichi* ("The Narrow Road to the Interior") by Matsuo Bashō. Kaneko comprehensively examined this *hangi, hanpon*, and also the records of publishing, and subsequently revealed the history concerning the publishing, which had not been clarified in previous research, along with facts on commercial publication in the Edo Period.

There are publishing records showing that profits were distributed by the ownership ratio of sharing the *hangi*, when conducting a joint publication. The *hangi* used were divided for safekeeping so that the counterpart publisher could not reprint without permission. In another case, *hangi* was taken as hostage, so to speak, by the holder of the publication rights, so that the book could not be completed without the participation of that person. By following the footprints of *hangi*, it is possible to see the several-fold information obtained from *hanpon*, such as the process of printing *hanpon*, who owned the *hangi*, to whom the *hangi* were sold, and how publication rights were transferred. Researchers are extremely few compared with the attractiveness of the research on *hangi*. Kaneko hopes that "the digital archive of ARC will spread research on *hangi*."

Takaaki Kaneko



Associate Professor, Kinugasa Research Organization

Subject of Research: bibliography of woodblock-printed books and study on publication in early modern times with woodblocks as basic materials

Research Keywords: modern history of publishing, *hanpon* (Japanese woodblock print books), bibliography of *hanpon*, digital archive

STORY #1-3

Transition in character count of game names in the game archive

Along with *manga* and *anime*, digital games are representative of contemporary Japanese pop culture and epitomize one of the genres in which Japan leads the world. In the academic realm, Game Studies has become a popular research field among researchers from all over the world. A pressing concern is that there are few game materials that are subject to research.

"Ritsumeikan University has worked on the research and archiving of home video games since the late 1990s and currently has about 8,000 pieces of game software," said Kazufumi Fukuda, who plays a central role in the archival efforts of the University. The Ritsumeikan Center for Game Studies (RCGS), which was founded in 2011, became a member of the official consortium for developing the Media Arts Database of the Agency for Cultural Affairs, which started a year earlier. Fukuda and others have been making progress in the creation of a game database.

"Game archives have several difficulties that are different from those of publications," Fukuda said. One of the major issues is copyright. When saving and publishing screenshots of game screens and videos of plays, permission from the game's creator is necessary under copyright law. However, there are cases where copyright holders cannot be found owing to corporate bankruptcies or absorption mergers, and a clear solution to the situation seems non-existent. It is also a challenge to archive games, such as online games, where "the entity is a phenomenal existence that is difficult to grasp," in the words of Fukuda.

Despite such difficulties, Fukuda expressed optimism: "There is a big advantage in having Kyoto, where Ritsumeikan University is located, as a base for game archiving and research. Famous game makers are gathered in Kyoto, including Nintendo, which has become synonymous with digital games in the world. In addition, I feel that the 'venture spirit' of the region of Kyoto has made it the land of game development, where newness and creativity are indispensable."

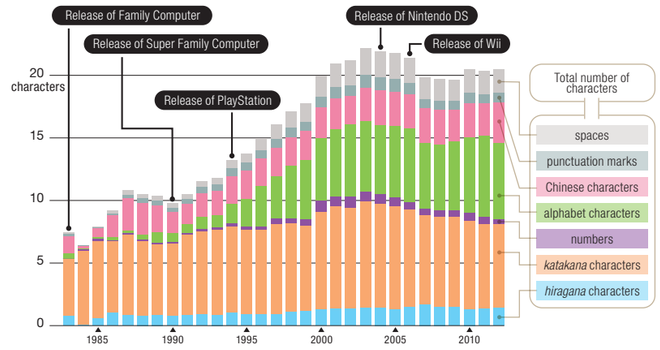
Meanwhile, the "cataloging" is an important issue in the archive. Fukuda mentioned having pondered "how to design a catalog of games" since becoming involved in the creation of a bibliographic record for the game archives of RCGS and the Agency for Cultural Affairs. At present, developing the cataloging standard is progressing; anyone can conveniently search for materials stored in libraries worldwide.

"In 2010, there was a major revision in the cataloging standard, called Resource Description and Access (RDA), adopted by many libraries in the world. As can be inferred from this name, the role of catalogs has changed from the classification of materials to tools for accessing materials. I have the impression that Japan is lagging behind in this trend," Fukuda explained.

The basis for designing such international cataloging rules is the concept called Functional Requirements for Bibliographic Records (FRBR). Fukuda indicated the possibility of applying this FRBR model to the game cataloging.

Fukuda added, "In FRBR, there are four major bibliographic entities, namely, 'Work,' 'Expression,' 'Manifestation,' and 'Item,' but in the case of games, these can be applied only limitedly." Fukuda expressed interest in "the possibility of creating a game data model with a model close to FRBR." If a game database that follows the cataloging rules of international standards can be created, its usage method could be expanded globally, enabling easier cooperation with overseas rights-holder organizations.

Average number of characters in game names and transition by character type



Fukuda also conducts applied research on catalogs. One of them is a study that chronologically tracks the number and types of characters in the titles of about 30,000 home video games.

"In the 1980s, when the Family Computer was released, titles in *katakana* characters were mainstream, but after 1990, titles in English alphabet characters suddenly replaced the ones in *katakana*," Fukuda said. Meanwhile, the number of characters generally increased, but after the release of the Nintendo DS in 2004, the game design changed, and simple titles such as *Magic Taizen* ("Master of Illusion") began to grow in popularity. Fukuda noted that "the popularity of simple games increased, in contrast with role-playing games, etc., and the titles were shortened." Further, it became clear that the proportion of character types changes with the strategy and personality of the game creator. For example, a large proportion of Chinese characters are used in games based on historical events.

Fukuda expressed his willingness for further research saying, "Accumulating research targeting cataloging is yet to begin."

Kazufumi Fukuda

Senior Researcher, Kinugasa Research Organization

Subject of Research: conceptual model building for video games database, transition of innovation in the history of the game industry

Research Keywords: innovation, game development, game archive, STS

The Potential for New Kimono Businesses in Kyoto

Homongi (semi-formal kimono for women), white silk with Ritsumeikan's "R" background pattern, and "Snow, Reeds and Mandarin Ducks" by Jakuchu Ito in Yuzen dyeing
Production/photography: ZONE Kimono Design Institute (Collection of the Art Research Center (ARC) of Ritsumeikan University);
original painting: "Snow, Reeds, and Mandarin Ducks" by Jakuchu Ito, Etsuko & Joe Price Collection

In FY2013, the ARC, which conducts digital archiving of Kyo-Yuzen designs and research on actual conditions of Kyo-Yuzen, ordered and produced hand-painted Yuzen and stencil-printed Yuzen kimonos, and recorded the process using videos, photos, and interviews in order to investigate and record the current Kyo-Yuzen situation (see STORY #1-1).

Very few people in contemporary Japan still wear a kimono every day. Nevertheless, a researcher at Ritsumeikan University, Mari Yoshida, has investigated the potential for new business models for Kyoto's allegedly outmoded kimono industry. Yoshida is interested in corporate innovation and value creation for customers, and has been exploring the "value of the kimono from the consumer perspective," an approach that has not yet been adopted within the kimono industry.

In examining the reasons for the decreased size of the kimono market, Yoshida notes that, to begin with, there is a common misunderstanding. While many kimono-related businesses believe that consumers' loss of interest in kimonos is related to the clothing being incompatible with modern lifestyles, she found that this trend was already evident in the latter half of the 1970s. Kimono production peaked during Japan's period of high economic growth, but then decreased rapidly in the 1970s. However, manufacturers' prices of kimonos continued to increase, despite the drop in production, until the collapse of Japan's asset price bubble economy in the early 1990s. According to Yoshida, what is notable is that, with the downturn in production, kimono-related businesses began to base their business models on the sale of "high-end/high-value-added" merchandise. She explains that such models were successful principally because both production and distribution were centered in Kyoto.

Kyoto had established the necessary brand power on which the production of high-value-added merchandise could be based, and was home to the techniques and production systems used for *Kyo-Yuzen* dyeing and *Nishijin* textiles. In addition, Kyoto's Muromachi district, with its experts in wholesale and retail sales, was the center for trading in kimono-related products. The industry adopted a survival strategy of shifting from *Kyo-Yuzen* dyeing and *Nishijin* textile production to hand-painted dyeing on pure silk and lavish *obi* sash textiles, made with gold and silver thread. Owing to the price increases, kimonos came to be considered as formal attire for special occasions only, and were treated as "assets." In addition, prices rose even higher as a result of the industry's peculiarly complex modes of distribution.

Thus, a new business model developed, in which added-value was based on the perception that kimonos are "formal attire," which changed the structure of the industry. According to Yoshida, while the managerial ability within the Kyoto kimono industry deserves recognition, the condition of today's kimono market is the result of the collapse of the aforementioned business model. This collapse began when the asset price bubble burst, reducing the number of high-income earners who purchased kimonos.

In terms of why businesses have not yet been able to identify a strategy that could drive a recovery in the kimono market, in addition to their lack of understanding of the market, she notes that these businesses have not been able to identify the "value of kimonos for consumers." Without understanding consumers' needs, it is not possible to provide products that will sell. Thus, she conducted a survey research of today's kimono users and identified six factors related to consumers' opinions on the "appeal of kimonos" and the "value of kimonos." Then, she performed multiple regression analyses on variables related to these factors and consumer behavior. Her results show that the "value of a kimono" differs for *kimono wearers* (indicated by a high frequency of wearing kimonos) and *kimono buyers* (indicated by a high annual expenditure on kimonos), who purchased them for formal occasions.

Kimono wearers find value and enjoyment in relatively cheap antique or ready-to-wear kimonos, made from synthetic fabrics by mixing and matching colors and designs. In contrast, *kimono buyers* find value in the "sense of specialness" they obtain from ordering from a reputable kimono maker and choosing the materials and colors of the threads. Based on her analysis, Yoshida notes that businesses have not recognized these different types of consumers and, thus, are all competing for the same consumer market. She believes that the overall kimono market should grow if businesses recognize each consumer market and pay attention to each other's markets.

According to Yoshida, the main requirement for halting the decline of the kimono industry is a clear understanding of the different markets and consumers. As a successful example, she cites one of Kyoto's largest wholesale producers of dyed kimonos, Chiso Co., Ltd., which has been in business for more than 450 years. While high-end *Yuzen* kimono accounts for 90% of wholesale sales of Chiso, it opened its own retail store, called Sohya, in 2006. By selling merchandise at prices well below the usual Chiso prices, the company succeeded in reaching the *kimono wearer* market, who enjoy kimonos as fashion items. She believes that Chiso has been successful because it has been able to differentiate the value of kimonos for different customers, thus adapting flexibly to that market.

According to Yoshida, the key to reviving the kimono industry is actively marketing to different markets and customers, something that has been lacking in the industry to date. In this regard, she is of the opinion that solutions can be generated by combining Kyoto's location and craftsmanship. As an example, she cites a new entrant to the market that will be partnering with a maker of *Nishijin* textiles to identify a target market. She believes this is probably the "biggest and last chance for the kimono trade." In addition, demonstrating her enthusiasm for the topic, she says, "As a researcher, I'd like to contribute to the support and cultivation of entrepreneurs who will build new businesses that will inject momentum into the kimono trade."

Mari Yoshida

Associate Professor,
College of Business Administration

Subject of Research: value co-creation, market formation process analysis, effectuation (logic of entrepreneurial decision-making)
Research Keywords: marketing, strategy

Revisiting the Kyoto kimono industry's high-end/high-value-added survival strategy

Creating Bicycle-frien dly Roads

Approximately 1,200 years have passed since Heian-kyo was built in AD 794, and the original network of roads from that time still exists within the city area of Kyoto, crossing each other in a grid, like the lines on a *Go* board. While maintaining this road network, roads for automobile traffic were then added during the modern era, resulting in a townscape with a mix of narrow and wide streets at equal intervals.

In the present day, cars and people go across narrow roads in all directions, with many places where traffic accidents are likely to occur. Keiichi Ogawa, who studies traffic phenomena on roads and contributes to urban transportation planning and traffic operation management, said, "It is not easy to maintain the roads according to the current needs when those roads were made in times where there were no cars." In particular, what Ogawa has observed is that the use of bicycles is increasing as a means of urban transportation. This switch from automobiles to bicycles has been accompanied by certain expectations, such as the formulation of bicycle network plans in each area to relieve traffic congestion and reduce the negative environmental impact.

According to Ogawa, among the various means of transportation, including automobiles, railway, buses, or by foot, bicycles are said to be the fastest means of transportation in large cities such as Tokyo, provided it is within a distance of about 5 km. "However, one cannot claim that this is always the case because in regional cities, such as Kyoto, as well as in suburban areas, the level of service available for the means of transportation and the characteristics of the roads are different from that of large cities," Ogawa explains. In fact, when Ogawa calculated the effective distance for riding bicycles in three areas—Nakagyo Ward in Kyoto City, Muko City in Kyoto Prefecture, and Kusatsu City in Shiga Prefecture—and found that *the range of distance where the use of a bicycle is advantageous* was between 0.47 km and 3.95 km in the Nakagyo Ward, 0.47 km and 3.23 km in Muko City, and 0.47 km and 2.91 km in Kusatsu City. This shows that regional differences exist.

"In Kyoto city area, the distance that the use of bicycles would be faster than the use of other means of transportation is long. However, as one goes further out to Muko City, Kusatsu City in Shiga Prefecture, and further out into suburban areas, other means of transportation such as automobiles, become more effective. In considering measures to promote the use of bicycles, it is necessary to take the actual circumstances into account in each of these areas," Ogawa explains.

Ogawa points out that current traffic improvements are not keeping up with the increase in bicycle use, saying "although bicycle use is recommended, bicycle traffic spaces are not adequately prepared in the many roads. In addition, as people are not fully aware of bicycle traffic laws, the riding of bicycles on sidewalks is chaotic, and traffic accidents with pedestrians and cars are becoming a problem."

According to Ogawa, the *Guidelines for Creating a Safe and Comfortable Environment for Bicycle Use* issued by the Bureau of Public Roads of the Ministry of Land, Infrastructure and Transport, and the Traffic Bureau of the National Police Agency in 2012, describe three types of environments: *bicycle tracks*, *bicycle lanes*, and *mixed-vehicle lanes*. Of these, it has been decided that infrastructure for *bicycle lanes* or *mixed-vehicle lanes* should be built. This is because, in general, it is said that it is safer for cyclists to ride on the roadways than on the sidewalks, and even if one were to ride on the sidewalks, it is safer to ride on its left side than on its right side. As Ogawa pointed out, however, the traffic situation varies from region to region, thus making it difficult to discuss this based on a one-size-fits-all approach.

Ogawa calculated the probability of a cyclist encountering a traffic accident between the points of departure and destination, based on the frequency of accidents involving bicycles at intersections. Ogawa used existing statistical surveys that have targeted the downtown area of Kyoto City, which has a grid-like road network, and the suburbs of Kyoto City, which have a non-grid-like road network, near Rakusai New Town. He assumes two cases that describe the directions in which bicycles travel: riding in one direction on the left side of a sidewalk or roadway and riding on both the right and left sides of a sidewalk.

"As a result of the analysis, I found that the probability of encountering a traffic accident is lower when riding on a sidewalk or a roadway on the left side for long distances of 3 km or more in total. Also, when comparing sidewalks with one-way traffic to roadways with one-way traffic, the probability of having an accident is lower with the roadways with one-way traffic," Ogawa says. The findings of the analysis thus turned out to support the aforementioned theory that the roadways are safer than sidewalks, but if one were to ride on the sidewalk, riding on its left side is safer than on its right side. However, "it should be noted that this trend is more prominent in Rakusai New Town than the downtown area of Kyoto City. Even if it is a relatively short distance of around 1.5 km, the probability of encountering a traffic accident becomes smaller where the sidewalks or roadways have one-way traffic." In the downtown area of Kyoto City, there are alternative routes that are almost of equal distance and many intersections with traffic lights. However, this is not the case in New Town. Because the latter has a complex shape and is separated from neighboring areas, detours are often necessary, which increases the number of roadway crossings. Therefore, the probability of encountering a traffic accident increases.

Tokyo downtown area, Kyoto city area, and suburban areas. The required transportation policies vary by region.

"Even in laying an infrastructure and space to be used as bicycle passages, the consideration of places and directions that the bicycles will pass through depending on the characteristics of the road network and the distance to be traveled by its users will lead to a reduction in traffic accidents," Ogawa says.

The number of tourists visiting Kyoto is increasing to an unprecedented scale. Thus, road traffic policies that make it possible for people, vehicles, and bicycles to move around safely are required.

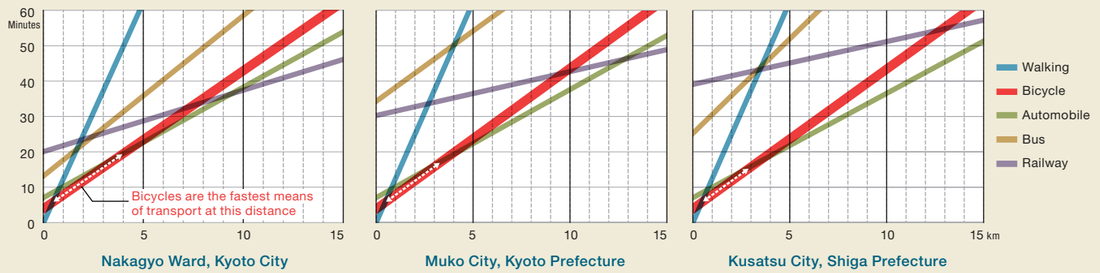
Keiichi Ogawa

Professor, College of Science and Engineering

Subject of Research: analysis of transportation behavior and traffic phenomena and examination of traffic safety measures targeting bicycle, motorcycle and automobile traffic

Research Keywords: traffic engineering, transportation planning

Relationship between distance traveled and required time



The Unknown History of *Buraku* in Kyoto from the Perspective of Public Bathhouses

Kyoto is renowned as a "city with many *sentos* (public bathhouses)" in Japan. When walking in the city, you can see buildings here and there with *Norens* (entrance curtains) that read *Yu,* meaning hot water—a sign for public bathhouses. Some have been in business since before the Second World War.

In Japan, bathing habits have existed for a long time, and there are many records and drawings showing that public bathhouses were popular in the Edo Period as places for socializing and recreation for the common people. Historical studies on public baths have often discussed the subject by focusing on aspects of customs and culture, but Miki Kawabata examines "public baths" from an original point of view, and has gathered attention both in Japan and abroad. Currently, she is interested in the formation of the national characteristics of the Japanese people around "cleanliness." "It is often said that Japanese people are a clean nation, but when was this discourse born and how has it been nurtured?" Kawabata questions. She is trying to clarify how physical and spiritual norms related to "cleanliness" in modern Japan were born and had changed. What was especially striking was that she spoke from the vantage point of public baths regarding the change in the Japanese norms on cleanliness in relation to the Public Bath Movement, which was a global movement that primarily took hold in the West.

"It is said that in ancient Japan there were customs and rituals called *misogi* (purification ceremony), and 'cleanliness' included not only physical things but also had spiritual and moral meanings," Kawabata says. It has been pointed out that frequent bathing in the Edo Period meant cleansing *the filth* off of one's heart, such as sexual desires and greed for money, and keeping one's self morally pure. Once entering the Meiji and Taisho periods, new meaning, such as *sanitation*, were given to the bathing and use of public baths. It is said that these developments were influenced by the Public Bath Movement that spread throughout Europe and the U.S. since the middle of the 19th century.

According to Kawabata, the Public Bath Movement started in England in the 1820s and was a movement that established bathhouses in areas where poor people, such as immigrants and laborers, lived. The importance of "sanitation" was discovered due to the development of medicine and hygieiology, and people realized that bathing was good for preventing infectious diseases and conserving health. In addition, it was believed that "physical cleanliness was a proof of being 'a citizen' and it functioned as a social work to educate people as 'members of civil society.'"

"Since the missions Japan sent to Europe and the U.S. during the Meiji Period witnessed this, the recognition that bathing and public baths are meaningful in terms of hygiene was shared in Japan too. As a result, public baths were built by the government," Kawabata explains.

In his book *Visit to the West – the Poor and Relief*, the social worker Takayuki Namae talks about the necessity of inexpensive public baths where laborers, as well as their families, could take baths. In the Taisho Period, public baths were discussed under the framework of social projects under the new purpose, *sanitation*.

Furthermore, Kawabata focuses on municipal public bathhouses from the Taisho Period, which were established by the government mainly in cities, and she takes a close examination at their establishment processes. One part of her research is on such establishment process of municipal public baths by Kyoto and their operations after establishment.

"A movement for establishing public baths as a social work occurred in Japan with the influence of information from the West, and in Kyoto during the Taisho Period, public baths were built for the *Buraku* (a settlement of people discriminated lower class people)," Kawabata said. She explained that the establishment of public baths started as a social work aimed at improving the lives of the *Buraku* in Kyoto, such as using the revenue from bathhouses as a financial resource for the *Buraku* in order to relieve people suffering from their poverty-stricken lives.

According to Kawabata, who thoroughly examined documents such as the *Buraku* history in Kyoto and the *Hinode* newspaper of that time, the first municipal public bath built in Higashi-Sanjo in September 1921 contained a barbershop on the first floor, along with a hall, a Buddhist altar, and a library box among other installations.

"Later, among the municipal public baths that were built one after another in Kyoto City, some were equipped with meeting places and vocational training facilities for those with special needs. These municipal public baths were not only providing a place for people to bathe and improve sanitation, but they are thought to have functioned as a place for improving the living environment of the communities and as a center for people in the area to gather," Kawabata argues.

Also, establishing the water supplies was an essential prerequisite to install municipal public bathhouses. Until then, some *Buraku* communities had inadequate water supplies, and water pipes had not been maintained. The establishment of municipal public baths also led to the acquisition of infrastructure, such as that of water supply systems.

With *Buraku* history and municipal government history alone, it is difficult to grasp this tough and graceful attitude of the people who lived through their experience as the discriminated *Buraku* community. "Some things come into view precisely because we are focusing on the *public baths*," Kawabata says.

The world that can be seen by looking at the *sentos* is quite a diverse one, including the Public Bath Movements around the world and the national characteristics of the Japanese people.

Public Bath Movement that influenced *Sentos* of Japan

Public baths in the Taisho Period*. Some were equipped to be meeting places and vocational training facilities, and they also served as a center where people of an area gathered.

Miki Kawabata

Senior Researcher, Kinugasa Research Organization

Subject of Research: the beginning of nationality for cleanliness in modern Japan; public bath and "Kokumin-Doutokuron"

Research Keywords: history of sanitation, medical history, scientific sociology / history of science and technology

* Social Department of Kyoto City, "13th Publication Series of the Social Department of Kyoto City, Public Bathhouses of Kyoto," Social Department of Kyoto City, 1924. Reprinted (Modern Era Documents Publishing Association ed. "Japanese Modern Urban Social Research Data Collection 4, Social Research Report I on Kyoto City and Kyoto Prefecture, 11 1924 (1)" Modern Era Documents Publishing Association, published in 2001.)

What are the Policies for Pre serving Kyoto's Townscape for the Next Generation?

Streets that connect a grid of shops, the *Machiya* (townhouses) that extend deep into the back and their narrow entryways, the narrow alleys—in addition to the historical buildings, Buddhist temples, and Shinto shrines, the living environment of historical city Kyoto comprises such elements in its residential areas. Tomohiko Yoshida, who specializes in urban and living environment policy, is fascinated by *Kyoto* as a city and is keeping track of the transition of its urban form.

He says, "The advantage of Kyoto is that it was not bombed during the Second World War, and the city's renewal has steadily continued from the modern era to this present day." There are quite a few townhouses in the city that were constructed more than 100 years ago. On the other hand, the aging of residents has progressed, and about 10% of the townhouses are vacant. It is not that the government is looking on with folded arms. In Kyoto City, the "*Ordinance on Preservation and Utilization of Historical Buildings in Kyoto City*,"—which utilizes the exclusion from application of provisions in the *Building Standard Law*—was put into place for the purpose of "preserving historical buildings in good condition, such as *Kyo-machiya* that have scenic and cultural value, and putting them in use, as well as passing them down to the next generation." Yoshida also advocates a political direction for these old buildings based on the results of studies on the urban structure and living environment of the *Kyo-machiya*.

For example, there is a study that details the supply situation of previously owned residential houses in Kyoto City as one of the indicators for evaluating the characteristics of the urban structure of the city. Yoshida analyzed the geographical distribution of Kyoto City, focusing not only on *Kyo-machiya* but also on the location, specifications, and price of all detached houses, including older detached houses and apartment buildings. He brought to light the price differences, as well as tendencies in total floor area and number of rooms using districts, such as Higashiyama and Kita Ward, and also locations and selling prices that are often available in the market. He has also identified a characteristic referring to the "undersupply of used detached houses," which is especially prominent in the downtown area.




Kyo-machiya, another world which can be found at the back of cul-de-sac streets.

More recently, Yoshida has also conducted a new study focusing on used residential houses that are "prohibited from rebuilding" (residences where only renovations are permitted because they are not connected directly to roads) in Kyoto City. He investigated the market conditions of various used residential houses, from *Kyo-machiya* that are considered to have a long and distinguished history to relatively new terraced houses of residences constructed about 50 years ago.

"There are currently two types of properties that are 'prohibited from rebuilding' that still remain in Kyoto City. Old *Kyo-machiya*, which were built between the modern era before the Second World War to immediately after the end of the war, and relatively new terraced houses that were built during the period of high economic growth around the 1960s," Yoshida says. Regarding the site arrangement of *Kyo-machiya*, they are generally located deep in the sites of the so-called "bed of the eel," which is said to be a narrow entrance facing a street where the building is split into the landlord's house on the front and a rental house on the back facing an alley. Many of the rental houses in the alley are buildings in a row-house format with three or four connected houses. Regarding the site's arrangement, the entrance that is in front is the original landlord's house facing the street, while toward the interior, it goes through a private path called *Fukuroji* (cul-de-sac street), which is less than one-meter wide. While they are both called *Kyo-machiya* in recent days, in the case of such *Fukuroji*, the residential building in the back does not meet the requirements of the *Building Standard Law* that stipulates that "the building must be in contact with a road by two (or) three meters or more." Therefore, rebuilding is prohibited at such places that have "inadequate connections," and the building is classified as property "prohibited from rebuilding."

Yoshida explains the actual situation, saying, "as for properties that cannot be rebuilt since the market price is set a little lower, those locations that are considered *Kyo-machiya* sell relatively smoothly." Because renovation is allowed (though rebuilding is not), these buildings are being renovated as houses or as accommodation facilities; they enter the market one after another. The tasteful atmosphere is popular among foreign tourists as well.

On the other hand, some buildings prohibited from rebuilding, which were constructed 50 years ago, also have a row-house format. However, because they are relatively new and are not located in the downtown area of Kyoto City, it is difficult to sell them as *Kyo-machiya*, and thus they do not sell well. "In order to continuously maintain the urban landscape, it is necessary to take an extensive view of the entire, previously owned residential housing market, grasp its characteristics, such as locations and specifications, and make use of this when formulating policies," says Yoshida.




Currently, *Kyo-machiyas* are hot in the previously owned residential housing market.

In considering a sustainable city, the people who live there and the way they live are also important variables. Yoshida says, "What is ideal for maintaining residential areas is the presence of men and women of all ages, and residents of various generations." From this point of view, he focused on the importance of households with young families living near their parents, and by targeting areas of detached houses in the suburbs of Kyoto City, he analyzed the difference between households that managed to live near their parents by moving into the area, in contrast with those that did not. "Living nearby" as used here carries more of a psychological meaning, which is to say, to live in a range where it is possible to come and go between the parent's and child's households within 30 minutes, irrespective of the means of transportation.

Yoshida says, "In the suburbs of Kyoto City that I surveyed, there were many of the children's generation who lived close to the husband's parents, and in particular, there were many households in which both the husband and wife worked." He analyzed the results to mean that "the determining factor in moving closer was that the children were worried about their parents, rather than them wanting the parents 'to take care of their grandchildren.'" Meanwhile, in the downtown area of Kyoto City, it seems that "the mix of residents is completed, so to speak." While there are many suburban housing complexes in which most residents are elderly people, the downtown area of Kyoto City, where the residents as well as the city landscape continues to be renewed, can be considered an ideal format. How can such a city be preserved for the future? The importance of Yoshida's research will further increase in the future.

Tomohiko Yoshida

Professor, College of Policy Science

Subject of Research: urban and regional planning, housing policy
Research Keywords: town planning/ architectural planning

Exploring the Landscape and Spectacles of Kyoto Reflected in Drawings and Old Photographs

Recently, a large cache of 35-mm film was discovered in a second-hand bookstore. They contained scenery of Kyoto City, including festival scenes, in the Showa 30s (between 1955 and 1964). The photographs were taken by Tokichi Kato, a private researcher of geisha districts which are called *Kagai.* It was indeed fortunate, both for the film and the photographer, that they happened to be discovered by Masahiro Kato (hereinafter Kato), a researcher investigating the processes of modern city formation via cultural and social geography. Kato had been focusing his attention for a long time on *Kagai*, which arose naturally in urban areas, and he noticed, among the vast number of negatives, a photograph taken in 1960 that was an image of *Nerimono*. Kato explained, "During the Gion Festival, *Nerimono* was an event in which *geikos* (Kyoto's local term for geishas) from the *Kagai* in Gion lined up in a procession to visit the Yasaka Shrine and to parade in and out of the district. Although the form changed after the first half of the 18th century, it continued but intermittently. However, this tradition ended in 1960, which is exactly when this photograph was taken."

What fired up Kato's spirit of inquiry was not just the fact that he discovered historically valuable photographs, but also the fact that he found one of the *geikos* that was captured in a photograph. "My imagination as a researcher was stirred by listening to the living voice of a *geiko* who had experienced an event that currently is not being carried out." Kato analyzed the photograph in detail with students interested in his research, and he revealed, "I was surprised that many of the roadside shops and signboards appearing behind the procession still exist exactly as they were." Continuing with his research, Kato then turned his attention away from the scenery and began instead to develop his interest in the *Nerimono* itself.

The last *Nerimono* of the Showa Period

Since the Edo Period, *Nerimono* continued as a tradition for about 200 years, although it was periodically interrupted and restored. Kato investigated the status of performing the *Nerimono* and found that its form significantly changed with the times. Initially, it was a celebration, in which *geikos* visited the shrine, wearing their most elegant clothing, during the night of the *Mikoshi arai* (purification of a portable shrine with water), one of the rituals of the Gion Festival. However, during the Meiji Era, it developed into an entertainment event, in which *geikos* marched in a procession dressed similar to what we refer to today as "cosplay." Furthermore, in 1936 (Showa 11), *Nerimono* greatly deviated from its conventional form. A concept was introduced to create themes based on the months of the year from January to December using the historical investigations of Kanpo Yoshikawa, who was a historian of manners and customs. Based on that, *geikos* and *maikos* wore costumes portraying historical figures matching the monthly themes and walked in a parade. Kato stated, "This would have been a major spectacle in modern Kyoto."

Apparently, this production was also performed in the last *Nerimono* in 1960, and the photograph depicts *geikos* who had dressed up to match the themes of each of the months, such as *Momo no Sekku* (Peach Festival, also known as *Hinamatsuri* (doll's festival)) for March and *Gojobashi no Tsuki* (the Moon of Gojo Bridge) for August. Kato explained, "So-called traditions have both what was passed down through the generations and innovation. In other words, by means of a constant process of renewal, traditions continue without becoming stuck in an era."

March:
Momo no Sekku
(*Joro*)

April:
Nakanomachi no Hanagumo
(*Sukeroku*)

August:
Gojobashi no Tsuki
(*Ushiwakamaru*)

September:
Miwa no Sugi
(*Omiwa*)

October:
Yoshiwara Kuruwa no Momiji
(*Tayu Takao*)

November:
Saruwakachou no Kanbotan
(*Shibaraku*)

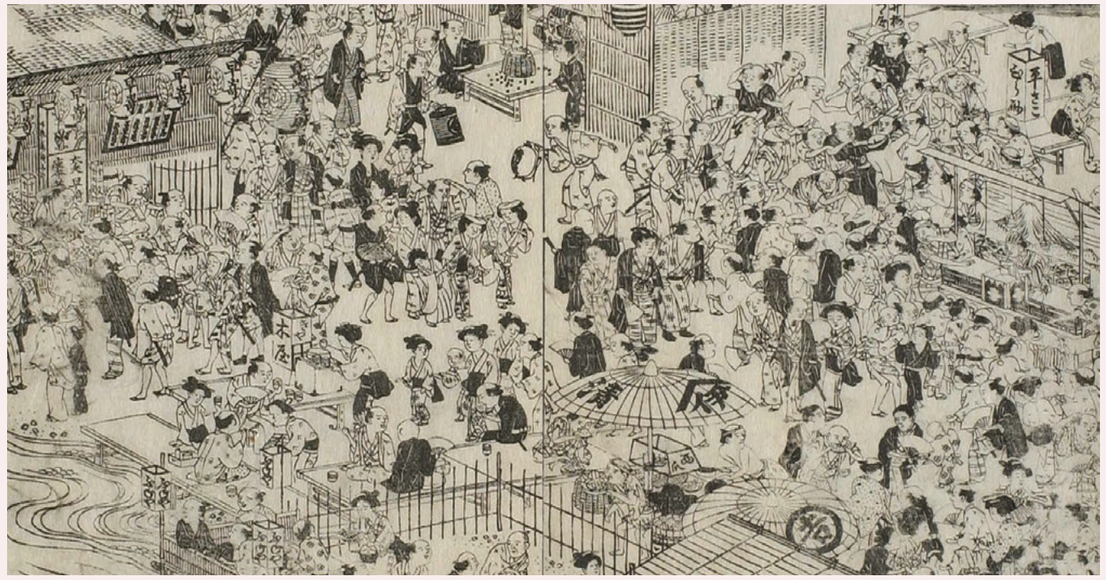
Masahiro Kato

Professor, College of Letters

Subject of Research: study on city-space formation in postwar Japan
Research Keywords: urban theory, human geography

Kato also studies *Nouryo-Yukas* (raised platforms on a riverbank used to enjoy the cool of a summer evening) at the Kamo River as an example of a tradition that changed as it was transmitted to the present. The current *Nouryo-Yuka* is an event that occurs from early May until the end of September, during which period the restaurants on the western bank of the Kamo River from Nijo to Gojo install raised platforms to be used as sitting rooms along the riverside. Kato and his seminar student have traced the transformation of the *Nouryo-Yuka* by exploring remnants in literary works, drawings, and old photographs.

For example, in the *Miyako Meisho Zu-e* (Images of Famous Places in Kyoto) by Rito Akisato (1780), the picture of people enjoying the cool evening is titled *Shijo-Kawara Yusuzumi no Tei* (Enjoying the Cool of Evening at *Shijo Gawara*). Also, in *Miyako Rinsen Meisho Zu-e* (Illustrated Guide to the Famous Gardens and Sites of Kyoto), published in 1799, two drawings show the theme of cool evenings on the dry riverbed by Shijo. A close examination of these drawings reveals vivid illustrations of men and women of all ages enjoying the summer nights. We can observe an exhibition tent of a troupe of acrobats on the sandbank of the Kamo River (which no longer exists), a man eating a watermelon bought at a stall, men rolling up their sleeves and fighting, and so on. As Kato described it, "You can see from this picture that, during the Edo Period, *Kamogawa Nouryo* (cool evenings at the Kamo River) was a place rich in pleasures and open to ordinary people."



Scenery of Kamogawa Nouryo in the Edo Period. People are depicted as enjoying various activities. The Kamo Riverappears to have been a place rich in pleasures, which is different from today.

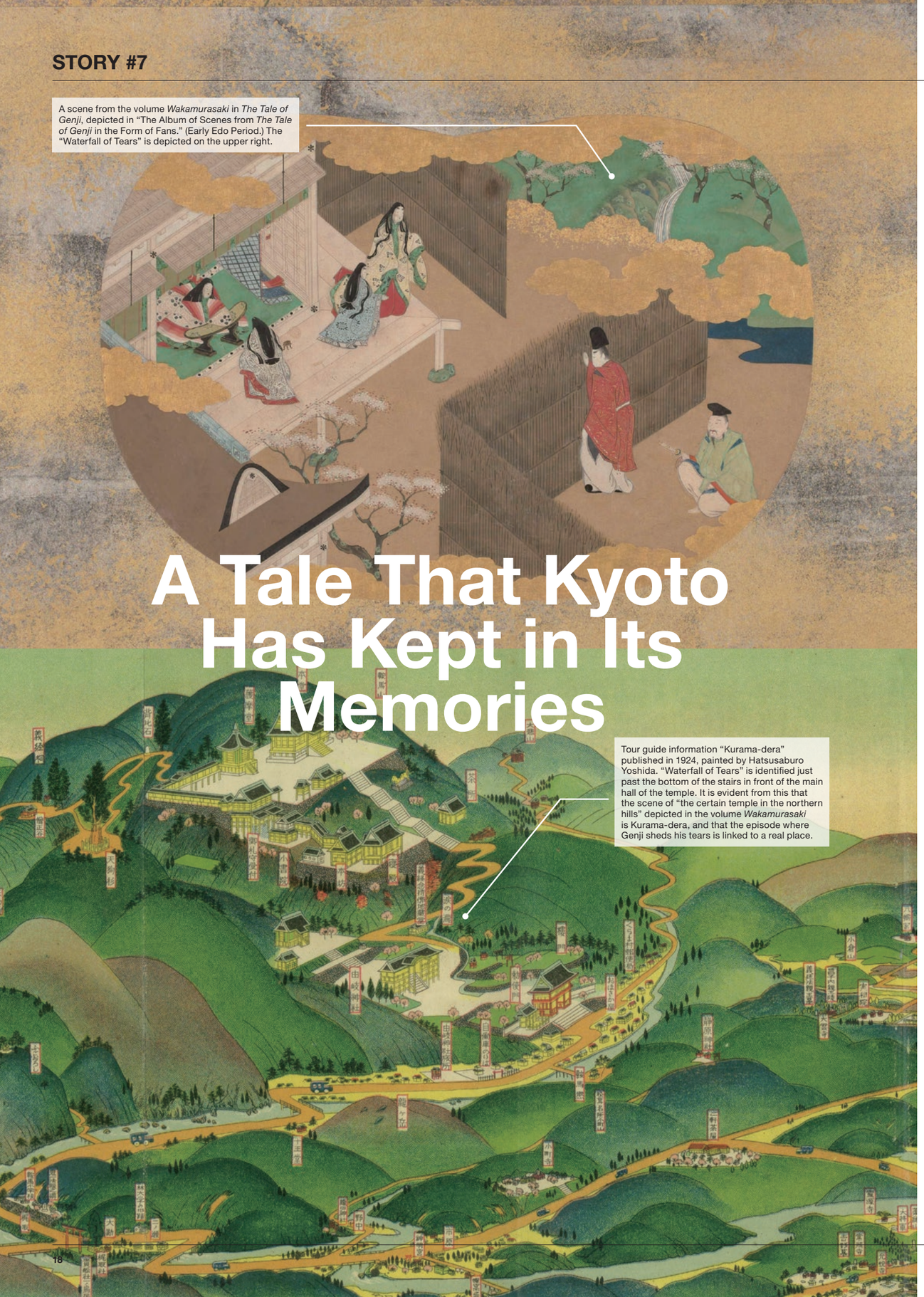
Miyako Rinsen Meisho Zu-e, *Shijogawara*
(Collection of the International Research Center for Japanese Studies)

Finding the footprints of Kyoto's spatial culture in literary works and drawings to weave a story

According to Kato, when the period changed from Meiji to Taisho, the tradition of enjoying the cool of evenings on the dry riverbed or sandbank disappeared. During the early Showa Period, the main stage of the *Kamogawa Nouryo* changed to *Nouryo Dai* (platform stands for enjoying the cool of evening), which are similar to those used today. After the Second World War, *Yukas* away from the riverbed became common. However, the *Nouryo* did not revive as a fun activity for ordinary people. Kato pointed out, "When the *Nouryo* of the Kamo River is understood as part of the spatio-cultural history, it could be said that it underwent a process of gradually losing its original diversity. In other words, it is the history of spatio-cultural impoverishment."

Kato presented a photograph of the western side of the Shijo Bridge in the Meiji Period, which is another piece related to the *Kamogawa Nouryo*. Written on it are the words *Kyoto Shijo Gawara Yusuzumi* (cool of the evening on the dry riverbed by Shijo Bridge); and it has been marked by a memorial ink stamp, with the date 1911. Kato and his student, who enlarged the photograph also discovered a shop's doorway curtain in the photograph, which seems to be printed with the words *Mina Tsuki Barae* (summer purification rites). This small piece of information has given rise to a new branch of research, since the character *Harae* (purification) or *Barae*, depending on the context, "infers a relationship between the *Nouryo-Yuka* of that time and the Gion Festivals." Referring to the unfolding nature of his research, Kato enthused, "If I find clues related to the spatial culture of Kyoto in literary works or documents, I feel the need to uncover the hidden story and write about what is there." Such curiosity underpins his research.

Tokichi Kato photographed all of the pictures on page 16.
The pictures on page 16 are the property of the *Masahiro Kato Laboratory.*



A scene from the volume *Wakamurasaki* in *The Tale of Genji*, depicted in "The Album of Scenes from *The Tale of Genji* in the Form of Fans." (Early Edo Period.) The "Waterfall of Tears" is depicted on the upper right.

A Tale That Kyoto Has Kept in Its Memories

Tour guide information "Kurama-dera" published in 1924, painted by Hatsusaburo Yoshida. "Waterfall of Tears" is identified just past the bottom of the stairs in front of the main hall of the temple. It is evident from this that the scene of "the certain temple in the northern hills" depicted in the volume *Wakamurasaki* is Kurama-dera, and that the episode where Genji sheds his tears is linked to a real place.

The *desires* of people connect fictional scenes in a tale to *actual places*.

"The ancient capital, Kyoto" is a poetic epithet often used when one speaks of Kyoto. These words overlap with images such as "a town that still retains the atmosphere of the elegant culture of the Heian Period, over one thousand years ago." However, in reality, Kyoto has been formed by the wishes of people "who desired Kyoto to be so," according to Kei Sudo. Sudo, who studies Japanese classical literature, focuses on *The Tale of Genji*, and explores "how Kyoto remembered this tale over time."

The Tale of Genji is said to have been written by Lady Murasaki (Murasaki Shikibu) during the Heian Period (AD 794 to 1185). The original book by Lady Murasaki is no longer extant. However, manuscripts and editions made in later eras have been handed down to the present age. Besides these, digests and annotated editions were written, and the book has been passed down and inherited in various formats, such as being included in *haiku* (Japanese poems of seventeen syllables) and *tanka* (short poems comprising of thirty-one syllables), as well as being used as a subject for craftworks. "How did readers in each era read *The Tale of Genji*? From the way in which past readers understood these stories, it is possible to acquire a glimpse into how they related to *The Tale of Genji*," according to Sudo.

For example, a study conducted by Sudo focused on the poem referred to as *Fukimayou* (*Blow About*), written by Genji. This poem is found in the chapter titled *Wakamurasaki* in *The Tale of Genji*. In this volume, Genji paid a visit to the holy man living at "a certain temple in the northern hills" to recover from an illness. There, he heard the "sound of a waterfall," and composed the poem "The winds blow about, down the depths to waken me, from the dream I had. In my eyes the tears well up, the sound of a waterfall" (The wind is blowing down the depth of the hills carrying the sound of the sutras. This awakens me from the dream of earthly desires, and the sound of the waterfall moves me to tears even more.)

The location of this "certain temple in the northern hills" is not mentioned at all in *The Tale of Genji*. However, Sudo says that the interpretation that the temple was Kurama-dera spread widely due to the influence of *Eiri Genji* and *Kogetsusho* published during the Edo Period.

Moreover, there is actually a waterfall near Kurama-dera named "Waterfall of Tears," according to Sudo. Indeed, birds-eye view maps of Kyoto painted by the cartographer Hatsusaburo Yoshida, who gained popularity from the Taisho to the early Showa Period, depict the "Waterfall of Tears" as one of the famous sites at Kurama-dera. Sudo thinks that "this was created because the people of later generations wanted Genji to be in the place where they were living." The desire to see him having "lived in real life" connects the tale—which is supposed to be fiction—to an actual place, and it eventually was established as a "related place." In Kyoto, traces of such activities exist everywhere.

Sudo also pointed out other issues. There is a historical account suggesting that the *Fukimayou* poem that was composed by Genji in the volume *Wakamurasaki* in *The Tale of Genji* was misunderstood as a poem authored by Minamoto no Yoshitsune (the military commander of the Minamoto clan), and this was passed down over the ages. Hisataka Asaka, a Japanese classical scholar of the Edo Period, visited Kyoto twice and wrote a chronicle about his visits. According to Sudo, who researched this, there is a passage saying that Hisataka, who visited Kurama in his second trip in 1702, asked the guide about the poem of "*Genji*" that was related to Kurama, and was surprised when he noticed that the guide misunderstood "the poem as belonging to Yoshitsune." It is said that Yoshitsune was trained at this Buddhist temple of Kurama during his early childhood. Since this place was originally associated with Yoshitsune before anyone noticed, the episode in which Genji composed the poem *Fukimayou* was misattributed to Yoshitsune, who also shares the same clan name (*Genji* literally means the Minamoto Clan. *Gen* is one of the ways in which one can read Minamoto). In birds-eye view maps other than the ones painted by Hatsusaburo Yoshida during the early Showa Period, "Waterfall of Tears" is depicted as the "Waterfall of Tears of Yoshitsune." "The *reality* of that era becomes clearer through such discourse, including these errors," states Sudo.

"Kurama-dera Temple Guide" published in 1926. Here, it is written as the "Waterfall of the Tears of Yoshitsune."

Sudo mentions the example of the area around Uji City in Kyoto Prefecture, famous for being associated with *The Tale of Genji*. This area was often described as the battleground mentioned in war tales, including *The Tale of the Heike*, until about the early Showa Period. Sudo reveals that until the Second World War, people were particularly passionate about such war tales. After the war, when it was time to consider "how to conceptualize Kyoto" once again, "Kyoto as the stage of *The Tale of Genji*" re-emerged, with its atmosphere reminiscent of the culture of the dynastic age.

There are many elements which could represent Kyoto. "The real pleasure of this research is found when we can pick up on the thoughts behind selecting *The Tale of Genji* in each era among all such elements," Sudo states. "Kyoto stands out from the rest of the nation with significantly more factors that superimpose the tales of the past on currently existing dwelling places. This probably means that there is enough influence or history that can support people's passions." What kind of stories are people trying to superimpose onto Kyoto? Sudo believes that by examining this issue, the attitudes of people living in that era and the society they encountered will come to light. He says, "I hope this becomes one of the factors examined when considering contemporary society."

Sudo reveals that among many tales, *The Tale of Genji* has been read and passed down over a span of more than one thousand years to this present age because, in each era, the people had a desire to tell the story. We wonder what stories will be told alongside Kyoto in a hundred years.

Kei Sudo

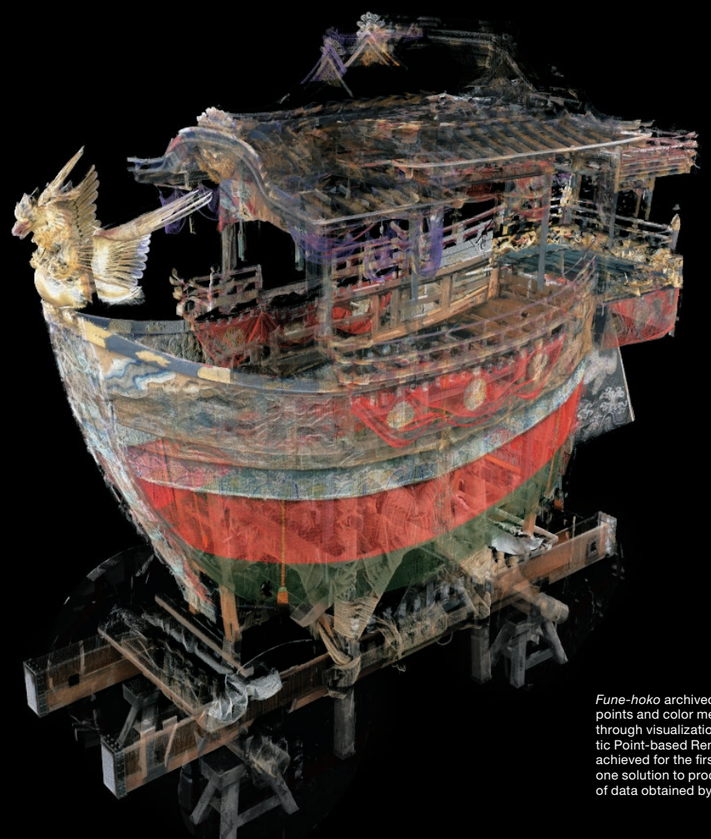
Assistant Professor, College of Letters

Subject of Research: a research on the birth and acceptance of Japanese classical literature

Research Keywords: Japanese classical literature, local culture studies

The upper part of page 18, "The Album of Scenes from *The Tale of Genji* in the Form of Fans." A collection of the National Institute of Japanese Literature.
The lower part of page 18 and page 19: "Kurama-dera" and "Kurama-dera Temple Guide", from the collection of Kei Sudo.

Technology That Can Visualize and Reproduce the Interiors of Festival Floats



Fune-hoko archived using 262 million points and color measured by laser. See-through visualization using the Stochastic Point-based Rendering method was achieved for the first time in the world as one solution to processing the vast amount of data obtained by laser measurement.

During the month of July, in which the Gion Festival takes place, the city of Kyoto is filled with an atmosphere more spectacular than usual.

The Gion Festival is the festival of Yasaka Shrine and has been celebrated for more than 1,100 years since the Heian Period. It is not merely an event; it is said to be a microcosm of Kyoto's history and culture, subsuming manners and customs, religion, art, and entertainment. Its highlight is the heroic and magnificent *Yamahoko Junko* (parade of decorated floats). A total of 33 floats are towed through the city twice, once during *saki matsuri* (first half of the festival) and then during the *ato matsuri* (second half of the festival), to the iconic sounds of the *Konchikichin* of *Gion Bayashi* (Gion Festival music).

With the development of digital technology, attempts to archive such tangible and intangible cultural assets digitally have become more popular worldwide. "By leveraging the strengths of digital technology, the possibilities will expand not only to preserve the cultural assets themselves but also to *utilize* them," said Satoshi Tanaka, one of the world's leading researchers in the technological development of digital archives of cultural assets and historical heritage. One representative achievement is the digital archiving of the *Yamahoko* (decorated floats) of the Gion Festival. Tanaka succeeded in accurately measuring the "*Fune-hoko*," which is a famous festival float with the unique shape of a boat, using stereoscopic measurements, such as laser measurement, and in creating a three-dimensional see-through visualization of the internal structure using his original technology.

Laser measurement is a method of obtaining shapes by measuring the distance to the object with laser beams. The score of the three-dimensional point group (point cloud), the data obtained by measurement, ranges from tens of millions to hundreds of millions of points. While it is possible to obtain extremely subtle data, processing such a massive amount of data can become a challenge. Tanaka considered the massive amount of data to be an advantage and devised a method to utilize the information proactively. He developed the world's first technology that creates a three-dimensional see-through visualization model using the three-dimensional point cloud data that constitute the point cloud with the Stochastic Point-based Rendering method, which utilizes the fact that "the light emitted from objects closer to one's viewpoint has a higher probability of reaching the eyes." Using this method, it is possible to achieve precise see-through visualization, not only of the external appearance of the three-dimensional shape but also of the interior, including the hanging decorations, the surrounding lanterns, and turrets. This can all be done without performing polygonization, a process which is usually indispensable when generating three-dimensional images with computer graphics (CG). In addition to reproducing the exact shape based on actual measurement values, the method also enables opacity adjustments, allowing one to view the *hoko* from various viewpoints, such as seeing the inside from a semi-transparent exterior of a *hoko* or enhancing the clarity of only the parts that one wants to see. "Being able to reproduce what the human eye cannot see is one of the strengths of a digital archive," Tanaka said.

In recent years, the scope of digital archives has expanded from archiving tangible things to encompass intangible things, such as performance arts (e.g., dance and theater), lifestyles, folkways, customs, ceremonies, and festivals. In *Fune-hoko*'s digital archive as well, Tanaka collaborated with researchers from other fields and recorded and reproduced in high definition and high fidelity not only the three-dimensional shape, but also the process of assembly, the circumstances of the parade, and even the accompanying musical sounds during the festival.

Tanaka has also been working on digitally archiving the *Hachiman-yama* float since 2016. "The *Yamahokos* of the Gion Festival are assembled before the parade every year and disassembled again when the parade is over; the disassembled floats are kept in storage until the following year. There are no records on how to assemble the hundreds of components and objects used as their decoration; this has been passed down through oral tradition. We are trying to archive the range of processes in its entirety, starting from the assembly of the *Yama* and *Hoko* floats (known as *Yama-date* and *Hoko-date*), all the way down to their disassembly," Tanaka revealed.

The *Hachiman-yama* has four pillars as a framework and is assembled in the order of base, tow bar, balustrade, pine tree, and objects used for decoration. Tanaka and others went to the place where *Yama-date* takes place several days prior to the parade and expeditiously conducted laser measurements and SfM photogrammetry so as not to interfere with the progress of the event.

"We calculated the reference point from the coordinates of the laser measurement; then, by setting the reference point of the coordinates of SfM photogrammetry to those common areas, we were able to set the point group data of the laser and photograph to common coordinates. Also, we carried out a process aimed at minimizing errors in the point group, and then completed a three-dimensional semitransparent see-through image combining the point cloud data of both laser and photographic measurements."

What is so rare about the Gion Festival, as well as *Yamahoko Junko*, is that they were passed down for over 1,100 years with hardly any changes in their substance. What has made this possible is the strong passion for preservation within the Kyoto locals who are involved in this divine service. "In digitally archiving traditional events, it is necessary to spend time not only on the technology but also to build a relationship with the people in such areas," Tanaka said. It can be said that this archive has only been realized because Ritsumeikan University's research structure and the research led by Tanaka were so rooted in Kyoto.

To make full use of the three-dimensional see-through visualization technology on a global scale, Tanaka is currently undertaking a project of three-dimensional measurements of World Heritage Sites in Indonesia. With Tanaka's technology, it may be possible to see the cultural assets and cultural heritage from around the world through a fresh, new perspective.

Satoshi Tanaka

Professor, College of Information Science and Engineering

Subject of Research: visualization and visual analysis of cultural assets, high-quality medical visualization, visualization of scientific simulation, precise visualization of complex surfaces

Research Keywords: computer graphics, visualization, visual analysis, high performance computing, large-scale simulation analysis, digital humanities

Digitally archiving the tangibles and intangibles relating to cultural assets and historical heritage.

The *Yama-date* (assembly of a *Yama* decorative float) of *Hachiman-yama*. A process taking five days, in which the base, tow bar, balustrade, pine tree, and objects used for decoration are assembled in order with four pillars as its framework.

Digitally Archiving *the Space of Kyoto* Across Place and Time

Virtual Kyoto

Kyoto is recreated in 3D on web browsers with databases, such as *Ukiyo-e*, *Rakuchu Rakugai-zu* (paintings and drawings both inside and outside the Kyo capital), and the photographic materials by Yutaka Kondo are embedded in it and, also, it is possible to go back and forth among the townscapes in the Heian Period, the Edo Period to the present day.

www.dmuchgis.com/virtual_kyoto/

Please plug in after launching IE
The picture is a representation of the Virtual Kyoto function as an image, and it is partly different from the actual screen

Archiving photographs, picture maps, culture, and memories of *places*.

Since the transfer of the capital to Heian-kyo, Kyoto still lives its over 1,200 years of history. If we could see the transition of Kyoto across time and space, from the past, present, and into the future, what kind of landscape will be reflected in our eyes?

Keiji Yano is working on making a *digital diorama* by digitally archiving *the space called Kyoto as a whole*, based on geospatial information, such as maps and picture maps. In *Virtual Kyoto*, which he first worked on in 2002, he tried to reconstruct the townscape of modern Kyoto in three dimensions on a computer, by using a Geographic Information System (GIS), which was state-of-the-art at the time, and Virtual Reality (VR) technology. “In addition to producing a 1:25000 scale three-dimensional topographic map using GIS software, I also added information obtained by measuring the heights of 400,000 buildings, and built a precise three-dimensional model of the urban area of modern Kyoto,” Yano explained. *Virtual Kyoto* provides fly-through and walk-through functions. These functions allow one to change their vantage points from one instant to another. You can be viewing Kyoto from the sky with a birds-eye view at one moment, then in the next moment be walking along the Shijo-dori Street, looking around the interior of the Minami-za (the primary kabuki theater in Kyoto) or the *Kyo-machiyas* (traditional Kyoto wooden townhouses), and so on.

The Google Earth service started only in 2005. It is amazing to think about what Yano was able to achieve a few years before that. “A new academic field named ‘Digital Humanities’ that combines human studies and information technology, which traditionally did not have anything in common has become popular around the world in recent years,” Yano explained. *Virtual Kyoto* was precisely the forerunner in this.

“*Data with information on locations* are not limited to modern maps,” says Yano. The creative aspect of Yano’s research is that the Kyoto of various periods is represented three-dimensionally using old maps and historical picture maps. In *Virtual Heian-kyo*, based on information obtained from excavations and historical documents, the inside of the capital of Heian-kyo is represented using three-dimensional VR. Buildings, such as the *Rajomon* Gate and the *Daigokuden* (Council Hall in the Imperial Palace), are also realistically reproduced by a three-dimensional CG model using the “Heian-kyo Restoration Model Design Drawing” and other documents as a reference. “I am trying to create a ‘four-dimensional GIS’ that also includes the time axis from Heian-kyo to the present day, reproducing the townscape during the periods of Edo, Meiji, Taisho, and Showa as well.”

In 2016, Yano published the *Overlaying Maps of Modern Kyoto*, which focuses on the Meiji Period until the end of

the Second World War. It uses archives such as a "tentative topographic map (*Kasei-zu*)" from the middle of the Meiji Period, "city planning basic maps" from Taisho to early Showa periods, and an "official topographic map (*Seishiki-zu*)" published in 1912 (Taisho 1). The strong point of this web based map system is that one can display several maps as overlays over Google Maps. It is not possible to view maps of different scales, orientations, shapes, etc., from the same viewpoint by simply overlaying them as they are. Yano identified the position information (coordinates) of several points in each map and aligned the position of each point using the georeferencing functions so that the different maps can be displayed on the same screen. By changing the degree of transparency of the maps, it becomes possible to see through the maps and compare each one.

Overlaying Maps of Modern Kyoto

It is possible to overlay maps of Kyoto City in the Meiji, Taisho, Showa, and present-day periods and compare them in detail while changing the transparency with a slider.

www.arc.ritsumei.ac.jp/archive01/theater/html/ModernKyoto/

Two types of "large-scale maps of Kyoto City (*Kyoto shi meisaizu*)" that are extremely meaningful for academic research are also published in the *Overlaying Maps of Modern Kyoto*. One is a collection of 291 paper maps discovered at the Kyoto Prefectural Library and Archives (currently the Kyoto Prefectural Institute, Library, and Archives) in 2010. Although these maps were produced and published prior to 1927 (Showa 2), it is estimated that many entries continued to be made until a few years after the end of the war. Buildings in Kyoto City are depicted one by one, and color-coded according to the purpose of the building, such as shops or conventional residences, as well as the type of business of the establishment and the number of floors of the building. "However, an original version of these maps where no entries had been made, actually exists," Yano says. They were the "large-scale maps of Kyoto City (*Kyoto shi meisaizu*)" comprised of 288 sheets discovered at the residence of the Hasegawa family in Minami Ward, Kyoto City in 2014. It has no coloration or retouches. Yano and others scanned these two types of drawings one at a time with high resolution, and aligned and synthesized them one by one using georeferencing. "We can compare the buildings in Kyoto City in the Taisho Period and the postwar period exquisitely by using the two detailed maps. It is also very interesting as research material," Yano says.

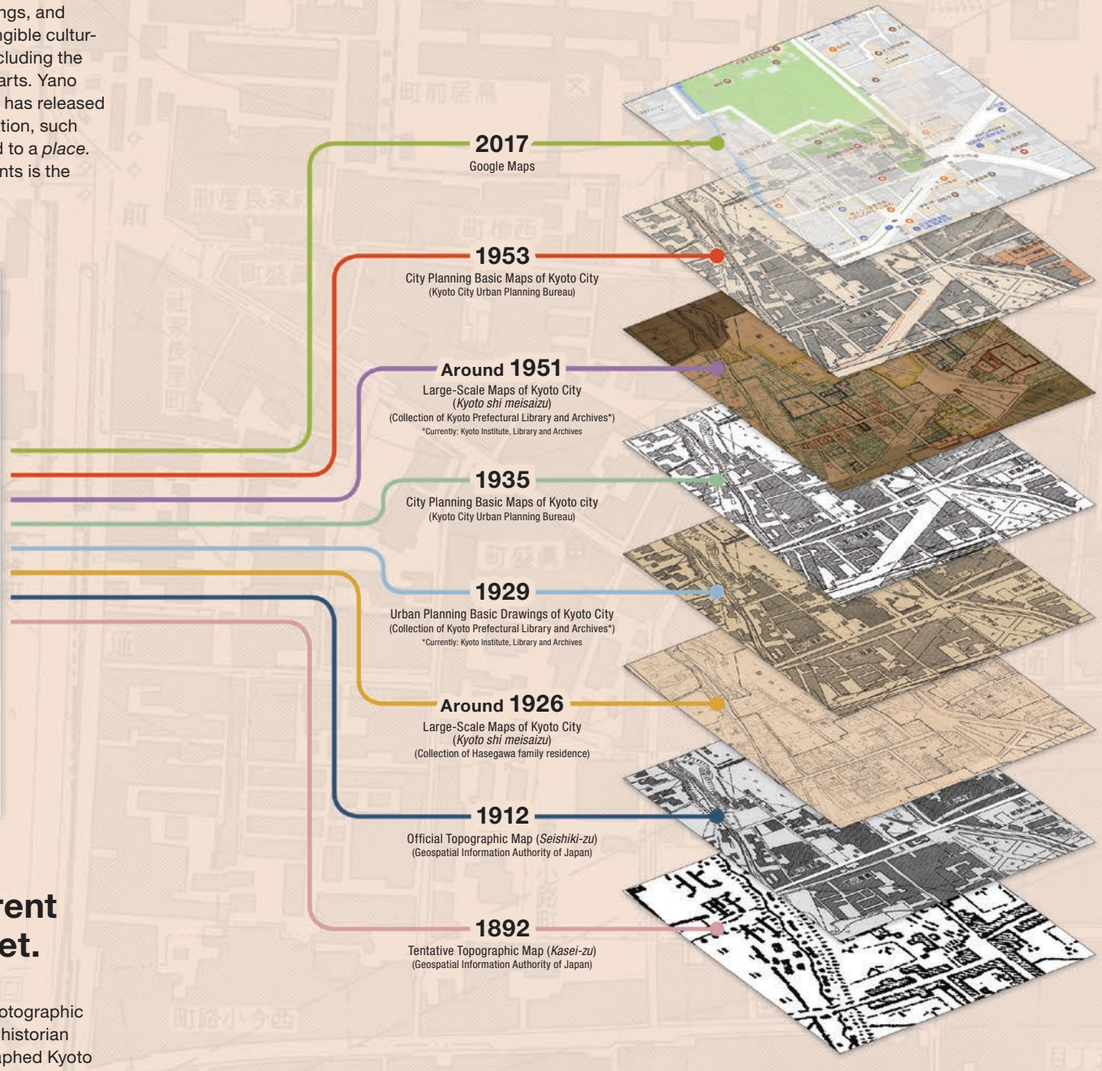
Other unique and valuable archives include the *Folding Screens of Scenes In and Around Kyoto*. It is said that there are about 170 pairs of *Folding Screens of Scenes In and Around Kyoto* in Japan and overseas, including items considered as national treasures and important cultural assets. As part of the project of the Art Research Center at Ritsumeikan University, where Yano and others play a key role, they are trying to consolidate and archive these assets in a single place. In addition to collecting data regarding well-known digitized folding screens, such as the *Uesugi Version* and the *Funaki Version*, Yano and others handled some other items from photographs, such as the *Shoko-ji Temple Version* and the *Seigan-ji Temple Version*, and some are published in the *Portal Database of Rakuchu Rakugai-zu* (paintings and drawings both inside and outside the Kyo capital).

The things we begin to see by overlaying multiple maps of different scales and shapes onto one sheet.

The achievements of Yano and others have a big impact because they are generously publishing a valuable and large digital archive on the Internet. It is a treasure trove of historical and geographical documents that are useful as research materials for researchers. Recently, a discussion on the occupation of Kyoto after the Second World War was published using maps accumulated in this way. Interdisciplinary research is progressing using archived information. Also, the archive is widely used as sightseeing and learning tool for the general public. It is also meaningful as a material to understand the past, including in the field of community development by local residents, which has flourished in recent years.

The *Digital Archive of the Historical City of Kyoto* that Yano is aiming to produce includes not only three-dimensional space but also content such as literary works, paintings, and photographs, as well as intangible cultural assets such as festivals including the Gion Festival and traditional arts. Yano does not simply list them but has released them with geospatial information, such as maps, as a platform linked to a *place*. One of the recent achievements is the archiving of about 80,000 photographic negatives of the architecture historian Yutaka Kondo, who photographed Kyoto from the 1930s to the 1970s. They are collaborating with Kyoto Prefecture to scan the photographs that were donated to the Kyoto Prefectural Library and Archives, one by one. They have also identified location information from the photographs, and have constructed a system that allows users to view the photographs from the map. Approximately 50,000 pictures have already been released.

As part of this effort, Naomi Kawasumi has archived about 2,000 photographs of the Kyoto City Tram from around the 1960s. "We organized a research group, identified places reflected in the photographs with the collaboration of experts, and released those photographs and data with location information. There were some pictures which their location could not be identified. We also added a system that allows people from the outside to enter information into the published database," Kawasumi says. Furthermore, the *Kyoto Memory Map Project* was launched, and *memories* of places and periods reflected in old photographs and maps are being collected and released as well.



Recently, Yano and others are also moving forward in the archiving of about 1,000 items as part of the same intangible content as *memories*. Included in these items are folding screens and hanging scrolls, tools used in seasonal and annual events, and daily necessities, which are all stored in the *Nagae Family Residence*, a *Kyo-machiya* designated as a cultural asset of Kyoto City. He revealed his intentions by saying "I would like to record the way of dwelling and living through *Machiyas* and collected items." "We believe that the understanding of Kyoto will be further deepened by accumulating diverse information through such a space and by its analysis and interpretations."

It must surely be fun to be able to experience Kyoto in each era across time and space, just like a time machine, with a *three-dimensional digital map*, representing a multi-faceted *Kyoto* with picture maps, pictures, culture, and memories.

Keiji Yano (Left)

Professor, College of Letters

Subject of Research: digital humanities, GIS of the historical city of Kyoto, geodemographic research

Research Keywords: human geography, geographic information science

Naomi Kawasumi (Right)

Associate Professor, College of Letters

Subject of Research: study on reconstruction and change of landscape focusing on modern Kyoto, digital humanism by using Historical GIS, history of relations between environment and human beings in modern Japan

Research Keywords: historical geography

Other databases introduced in the text

Photo database of railway and buses in Kyoto

www.dh-jac.net/db1/photodb/search_shiden.php

Portal database of Folding Screens of Scenes In and Around Kyoto

www.dh-jac.net/db1/rakugai/search_portal.php

Photo materials by Yutaka Kondo (beta version)

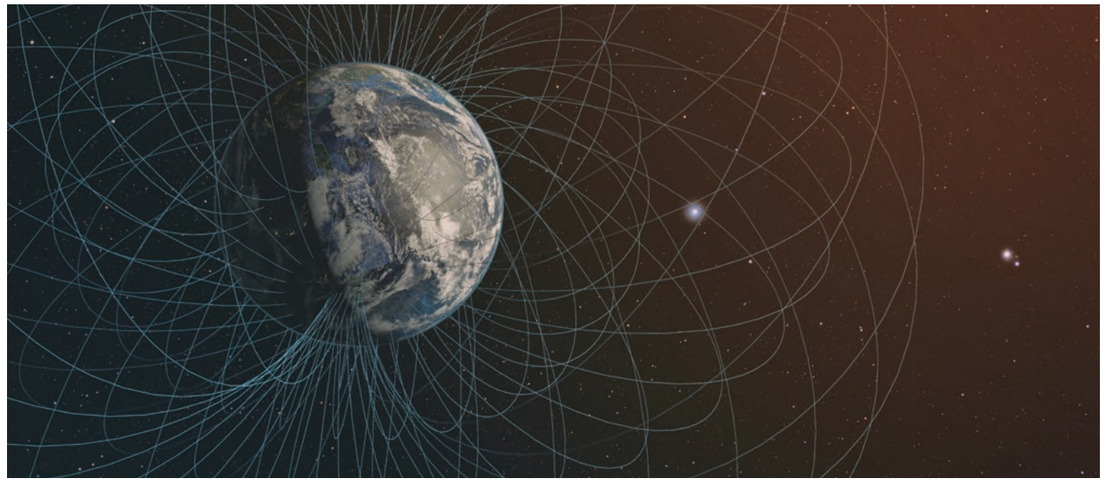
www.arc-ritsumei.com/

RESEARCH TOPICS

Galactic cosmic rays may play a key role in the story of climate change

Geoscientists provide new evidence that galactic cosmic rays could have a greater influence on climate change than previously thought.

Research published online in Scientific Reports in January 2017



The Earth's magnetic field.

Earth's geomagnetic field expands thousands of kilometers into space, and shields the Earth from intense radiation emitting from space. During "geomagnetic reversals," the North and South poles switch, and the field weakens over thousands of years, allowing radiation from space to reach the Earth. The radiation can come in the form of "galactic cosmic rays," which derive from atomic nuclei, sometimes accelerated by supernovae.

A 2017 study published in *Scientific Reports* suggests that the cosmic ray influx resulting from such geomagnetic reversals may be linked to climate change. A team of geoscientists from Japan and the United States propose that an increase in the amount of galactic cosmic rays reaching Earth may have caused clouds to form, notably in Japan. These clouds would act as a parasol and reflect a greater portion of incoming solar energy back to space, thus cooling Earth's climate. This effect is described as the "Umbrella Effect." If this proposal is true, it has important implications for climate science.

Previous research has suggested there may be connections between weakened geomagnetic fields and climate cooling, but little evidence has been uncovered to justify this link. "The impact of galactic cosmic rays on climate is not fully understood, due to the difficulty of accurately estimating the amount of cloud cover in the geologic past," says Ikuko Kitaba from Ritsumeikan University, the lead researcher of the study.

Kitaba and her colleagues have shed new light in this area by using pollen analysis to quantify the magnitude of cooling in continental and oceanic climates at Osaka Bay, Japan, where both the Siberian and Pacific air masses control local climate.

The team studied historical intervals corresponding to geomagnetic reversals, as well as intervals that had no relationship to these events. They extracted fossilized pollen from these intervals to understand the temperature and precipitation changes that occurred in the Pacific and Siberian air masses.

Interestingly, for the two studied intervals that did not correspond to paleomagnetic reversals, trends in temperature and precipitation matched conventional "Milankovitch theory" – which explains long term climate changes caused by the earth's orbit. A different factor seemed to be at play for the intervals corresponding to paleomagnetic reversals. These showed a contrast between ocean and land temperatures, reduced rainfall, and a weakened summer monsoon. Land has a lower capacity to retain heat than the ocean, and is more sensitive to changes in the amount of incoming radiation reflected back to space. The team asserts that the influx of galactic cosmic rays during the weakening of the geomagnetic field caused the formation of low-altitude clouds, which produced the "Umbrella Effect" and lowered land temperatures.

Kitaba concludes: "We believe that our research contributes to our understanding of the complex climate system". **This research could improve our understanding of climate change in the future, by considering the role of galactic cosmic rays when the Earth's geomagnetic shield is weakened.**

FIND OUT MORE

Title of original article: Geological support for the Umbrella Effect as a link between geomagnetic field and climate
DOI: 10.1038/srep40682 **Journal:** *Scientific Reports*
Contact corresponding author: Ikuko Kitaba, i-kitaba@fc.ritsumei.ac.jp

Ready (or not)… Set… GO!

Inconsistencies in how races are started could be slowing sprinters down.

Research published online in Frontiers in Psychology, May 18, 2017

By examining how a professional athlete's body responds on hearing the gunfire after the "set" warning during a start sequence, scientists at Ritsumeikan University, believe they have uncovered vital clues that could help reduce false or delayed starts during professional race events, like the 100-meter sprint.

"Athletes, coaches, and starter officials are always looking for ways to reduce false and poor starts in sprint events," says Mitsuo Otsuka, lead researcher. "A sports psychology study, such as this one, gives them evidence-based information, which they can use in real-world applications."

The scientists looked at how the athletes' joints moved when they were given the "set" warning through the start signal, a real or simulated gunshot. They closely observed the body movements of elite sprinters while anticipating the start signal by using different "start-sequence timings." They recorded the athletes' reaction times and movement patterns by using markers attached to their arms and legs, and motion-capture camera systems and pressure-sensitive plates installed in the starting blocks.

The researchers found that shorter start-sequence times resulted in slower joint responses, increasing the overall reaction times. Previous studies on reaction times following a sound, suggested that delays occur when the nervous system isn't given sufficient time to recover from a previous trigger, which in this study was the spoken "set" warning.

Otsuka and colleagues were among the first to look at coordinated joint movements across an entire start-sequence of a race. When the timing of this sequence changed, so did the movement of the joints. The upper-limbs, especially the shoulder, were the most delayed by shorter sequences. For some of the shortest sequences, the delay was as long as 0.039 seconds.

"A 0.039-second delay is a significant difference in a 100-m event where race times are measured to the 0.01 second, meaning sprinters might fail to advance to the final race event because of factors other than real athletic performance," said Otsuka. "Current regulations allow the officials to subjectively determine the start-sequence timing, which introduces race-to-race variability that could impact qualification heats and world records."

Otsuka and his fellow scientists believe that coaches and athletes can use this information in their training programs to ensure that they get out of the blocks faster. These scientists have also proposed how race starters could eliminate inconsistencies from race to race. They recommended implementing the same start-sequence timing for every race.

The problem with always using the same timing is that experienced athletes quickly learn to anticipate the starting signal. To prevent this, the researchers suggested occasionally giving sprinters a blank start that does not count as an official race start. It begins with the normal sequence of "On your marks…" and "Set…" but ends without the starting gun being fired.

Athlete reaction times may be affected by the timing of the starting sequence, which under current race rules is subjectively determined by each start official.

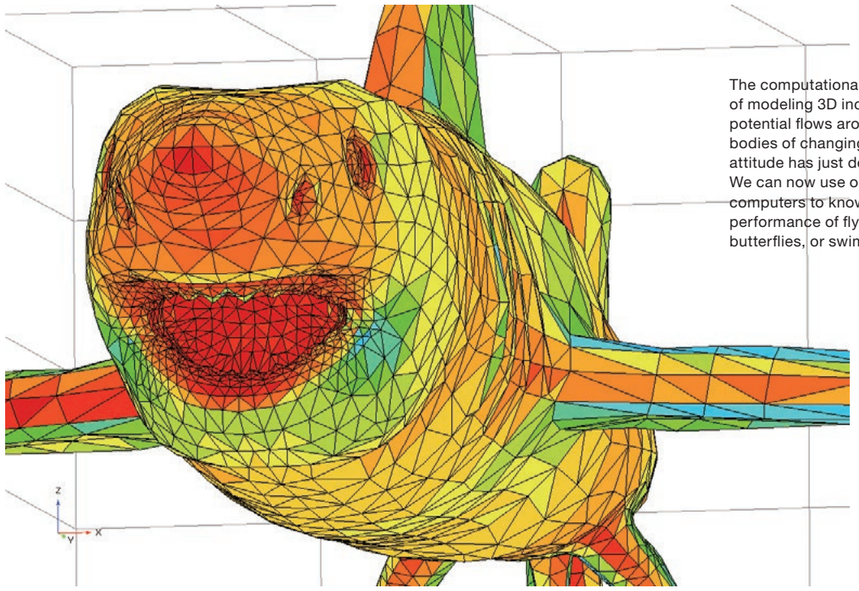
FIND OUT MORE

Title of original article: Timing of Gun Fire Influences Sprinters' Multiple Joint Reaction Times of Whole Body in Block Start
DOI: 10.3389/fpsyg.2017.00810 **Journal:** *Frontiers in Psychology*
Contact corresponding author: Mitsuo Otsuka, otsuka-a@st.ritsumei.ac.jp

You can now model swimming fish and flying birds at home: no supercomputer required

Modeling the motion of deforming bodies in fluids has just become easier.

Research published online in Computers and Fluids in September 2017



The computational complexity of modeling 3D incompressible potential flows around moving bodies of changing shape or attitude has just decreased. We can now use our personal computers to know the kinetic performance of flying birds, butterflies, or swimming fishes!

Predicting 3D incompressible potential flows around a body moving in a fluid with a wake vortex is a demanding task, more so for bodies whose shape and attitude may change, such as a flying bird or a swimming fish.

To avoid the high computational load associated with traditional finite-element or finite-volume approaches, researchers have developed alternative approaches to the modeling problem (e.g., panel methods). However, these approaches are not a one-fit solution so it is typically necessary to fall back on the computationally heavy finite-element/finite-volume approaches.

A recent study by Yoshifumi Ogami, from Ritsumeikan University, proposes a new approach to solve the equations of fluid dynamics that extends the capabilities of panel methods in lifting/vortical flows. His work promises to decrease the computational load required to analyze the motion of deforming bodies in such cases.

Ogami explains this reduction becomes possible because "when an object in a fluid changes its shape and attitude, like a flying bird or a swimming fish, … methods such as the finite-element or finite-volume methods need to update the computational grids around the object according to the deformation and/or attitude of the object." The proposed panel method does not require imposing the Kutta condition for predicting lifting/vortical flow; thus, it now can provide solutions for round objects without requiring computational grids. "The problem with the panel method was that vortex vectors were not being adequately treated in both steady and unsteady flows. Our work was motivated by a desire to solve this problem," Ogami adds.

But is this method accurate? To find out, the researchers compared the numerical results obtained using the proposed approach with the analytical solutions of a few simple cases. They also investigated the applicability of the method to unsteady lifting/vortical flows, its versatility, and its suitability for moving deforming bodies by modeling a swimming great white shark with and without a wake vortex, from where new insights into shark locomotion can be obtained.

The impact of this research is clear. As explained by the author, "**(now) you do not need a supercomputer when studying deforming objects and/or creatures moving in a fluid.** Common personal computers can now theoretically analyze the kinetic performance of creatures such as flying birds, butterflies, and swimming fishes." Ogami believes that the ensuing results will be useful to design machines with higher efficiency and lower energy consumption.

FIND OUT MORE

Title of original article: A three-dimensional source-vorticity method for simulating incompressible potential flows around a deforming body without the Kutta condition
DOI: 10.1016/j.compfluid.2017.06.001 **Journal:** *Computers and Fluids*
Contact corresponding author: Yoshifumi Ogami, y_ogami@cfd.ritsumei.ac.jp

Keeping pace with intellectual property: Clues from Europe for unleashing the potential of mediation

Awards-winning study suggests mediation offers dynamic and flexible solutions for ever-evolving IP disputes.

Research published online in September 2016

Encouraging the development of alternative methods to settle disputes has long been a key legal policy worldwide. Rooted in the movement to improve access to justice, the EU introduced the Mediation Directive in 2008. Yet almost a decade after its implementation by Member States, the use of mediation to resolve intellectual property (IP) disputes remains limited.

Asako Wechs Hatanaka, Associate Professor at Ritsumeikan University's College of Law, recently completed a ground-breaking comparison of laws and practices on mediating IP disputes in the UK, France, and the EU. Her aim was to identify challenges in resolving IP claims through mediation, a topic little considered by IP scholars. Her work was awarded the *"2016 Best Ph.D. Thesis Prize"* from the Research Federation «L'Europe en Mutation» (University of Strasbourg, France), and the first "*Best Paper for an Emerging Scholar*" by the European Policy for Intellectual Property. In her words, this study "seeks to benefit anyone looking for a solution in IP disputes, because mediation clearly has a role to play."

Mediation is not only cost and time effective, confidential, and flexible for international disputes, but also serves as private ordering, particularly when legal rules are unclear. Wechs Hatanaka highlights several suitable dispute scenarios, including "the liability of Internet service providers, such as eBay for counterfeit goods or YouTube for copyright-infringing contents; private copying and reprography levies for digital libraries; and patent holders' strategies of licensing and marketing."

Wechs Hatanaka concludes that mediation needs to be optimized for intellectual property law, and proposes several innovative ideas. Her first recommendation is to emphasize the significance of mediation in IP policy. It is necessary to establish rules for the process that fully reflect the characteristics of the rights involved, as well as the customs and practices of the relevant sector. She explains that parties must also have confidence in mediators' impartiality and independence, as well as the confidentiality and enforceability of agreements. Crucially, party autonomy is fundamental to mediation.

To overcome the lack of accessibility to mediation, Wechs Hatanaka's second recommendation is to introduce stronger incentives for parties to mediate IP disputes. Case law suggests this could even justify mandatory mediation, with precedents in low-value disputes in several European countries.

Practically, the study's third recommendation is to create a European dispute resolution center for IP disputes. This would serve as a centralized platform, responsible for both facilitating and coordinating the mediation of such claims across the continent.

Curiosity was the primary reason Wechs Hatanaka undertook this study. "I simply wanted to understand why mediation, widely recognized as a useful tool, is not used in the field of intellectual property," she says. Her Ph.D. thesis appears to be the first comparative study on the issue.

As Wechs Hatanaka concludes, **such optimizations of mediation will contribute to enforcing IP rights on a dynamic scale even beyond the EU, particularly in developing countries.**

With rapid technological developments and the borderless nature of IP rights, parties will increasingly turn to mediation for settling IP disputes.

FIND OUT MORE

Titles of original articles: Mediation and intellectual property law - A European and comparative perspective
Optimising mediation for intellectual property law - Perspectives from EU, French and UK law
URL: https://publication-theses.unistra.fr/public/theses_doctorat/2016/Wechs_Hatanaka_Asako_2016_ED101.pdf
Journal: *IIC (International Review of Intellectual Property and Competition Law)* forthcoming
Contact corresponding author: Asako Wechs Hatanaka, hatanaka@fc.ritsumeikan.ac.jp

COLUMN #1 The World of Shirakawa's Letter Science

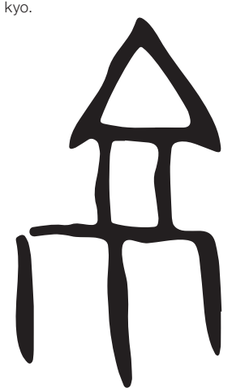
"京" (Kyo) From the Special Theme

Takao Sugihashi

The special theme of this issue is *Kyoto* (京都). The characters for *Kyo* (京) and *To* (都) both refer to the capital (*miyako*). However, according to *Jitsu* (a unique Chinese-Japanese character dictionary by Shizuka Shirakawa that provides historical and developmental roots for each listed character), 京都 (*Kyoto*) reads as *Keito*, which implies the term *capital*.

In *Joyo Jikai* (a dictionary of commonly used interpretations of characters by the same author as *Jitsu*), the following is written about the character 京 (*Kyo*): "An entrance in the form of an arched castle gate […] that has a watchtower on the top. This castle gate is called *Keikan* (outlook on the capital). There were big castle gates that were used to protect the capital city, and so the term 京 (*Kyo*) came to mean the *capital*, and consequently, *big*. Furthermore, corpses (dead bodies) abandoned on the battlefields were gathered and embedded into these castle gates," "as a magical spell (or incantation) to keep away harm from the world outside." As an example, the term *Joukyo* is mentioned, which means "to go to the capital." At present, it means "to go to Tokyo." It is interesting to note that the author goes out of his way to remark on the present use.

But oh what a dreadful custom! In the case of Kyoto, what corresponds to the above-mentioned *Kei* (*kan*) is the *Rajomon* gate (eventually, also *Rashomon*) of *Heian-kyo* (one of the names of *Kyoto* dating back to AD 794)—which also makes one think of Ryunosuke Akutagawa's *Rashomon*. However, while what is depicted in *Rashomon* is the result of the dilapidation of the gate and deterioration of public security, the story did not involve dead bodies being embedded into the gate. To begin with, although Heian-kyo had the *Rajomon* gate, unlike the fortified cities in China, it is thought that there were no *Rajos* (ramparts surrounding a city) surrounding Heian-kyo.



In Japan, *Kyoto* was the common name of the capital in ancient times, but eventually, during the cloistered government period, *Kyoto* turned into the proper name of the region that included Shirakawa, Toba, and the emerging land outside the *Heian-kyo* area. In that case, the establishment of the *Kyoto Shugo* (military commissioner of Kyoto) by the Kamakura shogunate is regarded as an early example of its use as an official name (ref. *National History Dictionary*, *Kyoto* section, written by Tatsusaburo Hayashiya)

Monument of the ruins of *Rajomon*

The main gate of *Heian-kyo*, *Rajomon*, is located at the southern end of Suzaku Avenue, and it corresponds to present-day Karahashi Rajomon-cho in Minami Ward, Kyoto City. Suzaku gate is the main gate of the Imperial Palace at the northern end of Suzaku Avenue, which is located near the Ritsumeikan Suzaku Campus.

From the writings of Shizuka Shirakawa

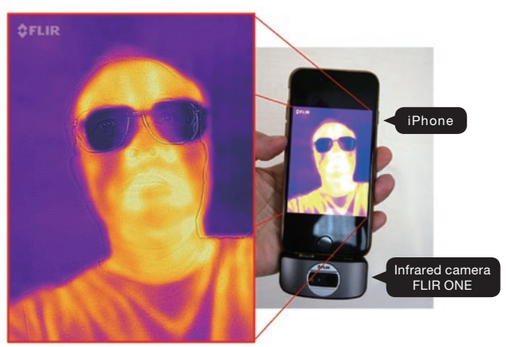
Jitsu is a Chinese-Japanese character dictionary that pursues the character systems, from the oracle bone scripts (inscriptions on bones and tortoise carapaces) and bronze script (inscriptions on metal objects) of ancient China to the characters commonly used in modern Japan.
Joyo Jikai is an introductory character dictionary written by the author that focuses on commonly used characters; it is written in an easy-to-understand manner.
Published by: Heibonsha

Takao Sugihashi Director of the Shirakawa Shizuka Institute of East Asian Characters and Culture/ Professor, Kinugasa Research Organization and Professor Emeritus

COLUMN #2 Viewing the World via Infrared Rays

Viewing the World via Infrared Rays: Infrared for All

Masafumi Kimata



Infrared camera for smartphones and infrared image

The figure shown here is an infrared image captured by the author using an infrared camera that was developed as a smartphone accessory and attached to an iPhone. Although technically infrared images do not have *color*, this particular image is in pseudo color, with the high and low temperatures displayed in color.

Since 2009, Ritsumeikan University has organized an annual event, the *Infrared Array Sensor Forum*, every summer. In 2011, we invited Mr. Gabor F. Fulop from a research company in the U.S., and he delivered a lecture on the infrared camera market. At the end of this lecture, Mr. Fulop mentioned that the smartphone market is an emerging market. Although more than 200 corporate representatives were present during the lecture, I believe that none of them, including me, could anticipate then that infrared cameras for smartphones would be developed so soon. However, in January 2014, an infrared camera for smartphones was announced in the U.S. – a development that left me, to say the least, extremely surprised. These kinds of infrared cameras are currently sold at a price of approximately $ 300 each, and can be purchased in Japan as well.

Since then, I have regularly been introducing infrared cameras for smartphones at seminars and in review articles. However, the first reaction that I receive from most people is, "what would one use such a thing for?" or "will anybody buy such a thing?". I have heard such questions several times, and I feel that behind these questions lie the inherent negative views that Japanese people typically hold towards what is new and odd to them.

Companies that developed infrared cameras for smartphones have also started selling semi-finished products that are core components of the infrared cameras used in their goods. They are not interested in simply making profit by selling infrared cameras for smartphones, rather they are also aiming to enlarge the market with the help of other companies. Whether they will succeed in this challenge remains to be seen, however, their stance on trying to strategically transform the current condition is something that Japanese people could learn from.

Masafumi Kimata *Tokunin* professor, College of Science and Engineering
Professor Kimata acquired his doctorate degree in engineering from Osaka University in 1992. He began working for Mitsubishi Electric Corporation in 1976. After being engaged in R&D of infrared image sensors, in 2004, he became a professor at the College of Science and Engineering, Ritsumeikan University. He assumed his current position in 2017. In terms of recognition: he was awarded the Kinki Region Invention Recognition Commissioner of the Patent Office Award in 1992, and the Prime Minister's Invention Award at the National Invention Awards in 1993. Since 2009, he has been serving as an invited staff member at the Japan Aerospace Exploration Agency.

COLUMN #3 College of Comprehensive Psychology regular column

Looking at Society from the Multicultural Counseling Perspective

Hanako Suzuki

Have you ever questioned your own norms? We are often too oblivious to our own norms and assumptions unless confronted with an extraordinary situation. Although our values are greatly influenced by the cultural context in which we grew up and continue to live, we would never consider the extent to which these values are universal or whether others would find them common sense as well.

Let's look at the act of child-rearing as an example to illustrate the relationship between values and cultural context. If a man is proactive in child rearing, people would compliment him by calling him an *ikumen* (from *iku,* which means rearing, + *men;* a play on *ikemen,* which is used to describe attractive men). However, if a working woman takes her child to a nursery school or to a park, nobody calls her an *ikujo* (rearing woman, with connotations and nuances similar to those for *ikumen*) or compliments her as a "great mother." Many Japanese probably do not even question this situation, and one of the reasons for this is that the raising of children by women is considered a given in the Japanese cultural context.

However, nowadays, as society and its members have more diverse backgrounds than before, it is important for us to reconsider the norms that we have unthinkingly assumed in our value system. In particular, those forming a majority in society may be imposing their norms on minorities without realizing it, and they may be unknowingly looking down on or hurting people who are different from themselves.

My area of expertise, multicultural counseling, traces its origins to the civil rights movement in the U.S., when counseling psychologists questioned that the counseling model developed for white people may not be suitable for racial minorities. The research currently being conducted in the area of multicultural counseling focuses on the wellness across life-span among minorities. Though Japan is often considered as a racially homogeneous nation, the concept of multiculturalism is becoming more relevant, because its members are getting diverse. The number of the so-called "halfs," or half-Japanese (i.e., people whose mother or father has overseas roots) is on the rise, and there are many ethnic, sexual, religious, and other minorities. As a researcher who believes in social justice and hopes to promote wellness and happiness among minorities, I am determined to continue producing research findings that influence both individuals and society as a whole.

The author is the third person from the right. At a symposium of the American Psychological Association.

Hanako Suzuki Associate Professor, College of Comprehensive Psychology
Associate Professor Suzuki obtained a master's degree in counseling psychology at Lynch Graduate School of Education, Boston College in 2007, and a doctoral degree in medicine at Graduate School of Medical Sciences, Kumamoto University in 2012. She has been in the current position since 2017, after working as an assistant professor at the University of Tsukuba. Clinical psychologist. Affiliated to the American Psychological Association (APA), the Japanese Psychological Association, the Association of Japanese Clinical Psychology among others. She has been elected as Co-Chair of the International Section of the Society for Counseling Psychology, APA, for a two-year period starting in 2018.

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