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.

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. The demand for kimonos and a shortage of successors, the dying industry in Kyoto is in a critical situation. Kyoto’s kimonos are produced in a process that 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 any 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. Kollo 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 kimonos as a work of art, but also the process of making kimonos, the techniques and comments of the craftsman involved in it, and the tools used.”

In this project, from the production of its white silk fabric woven in Kyoto 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
are printed in various colors, it is said that dozens of stencils are employed to decora-
tate 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-carv-
ing 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 that in production process gave
us valuable insights that will be useful in
furthering the research on stencils.”

Suzuki explains that as “tradition-
al” 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 kimonos 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 interest-
ing 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, Kyoto-
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 (Happo)
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, discov-
ered the existence of Yuzen works that
were created immediately after the Sec-
ond World War. While the demand for
expensive kimonos dyed using Yuzen

STORY #1

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 trans-
mission. What is known as the oldest
printed material in Japan is the 8th century
Hyakumantō Dazai ("One Million Pa-
das and Dharmar 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 il-
lustrations 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, publish-
ing 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 hangi books (prints printed
from woodblocks) made by woodblock printing.
The majority of ukiyo-e (prints or paintings
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 un-
usual researcher who focuses not only
on hangi but also on hanpon for printing.

“Hanpon bibliography and study on
publishing, which focused on physical
"things," are indispensable for research on
early modern art and literature. Nev-
ertheless, 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 com-
pared with hanpon, and there are almost
no reproduced materials. Kaneko is trying
to solve this problem by using digital ar-
chives.

“[Between] Edo (Tokyo) and Kamigata
(Osaka and Kyoto), which were the cen-
ter 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 achieve the archive
without the location of Kyoto.” Kaneko,
who said this, digitized about 5,800 han-
gi materials managed by Nara University
as part of an ARC project and released
the digital archives on a website.

Lighting is crucial in digitizing 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 uneven-
ness of the surface of the hangi from four
directions. After 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 Höökan and Unsööe.
The Art Research Center (ARC) of Ritsumeikan University was established in 1998, whose mission has been not only to conduct historical and social research and analyses of both tangible and intangible cultural properties such as visual and performing arts and craftsmanship, but also to record, organize, preserve and disseminate the research outcomes. The vast digital archives of Japanese culture and art 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 hanpon. Kaneko hopes that “the digital archive of ARC will spread research on hangi.”

STORY #1

A long with manga and anime, digital games are representative of contemporary Japanese pop culture and epitome 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. 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 the industry 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 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.

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 started appearing more often, with 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, in contrast with role-playing games, characters are used in games based on historical events.

Fukuda expressed his willingness for further research saying, "Accumulating research targeting cataloging is catalyric to begin."
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. Kimo-production peaked during Japan’s period of high economic growth, but then decreased rapidly in the 1980s. However, manufacturers’ beliefs 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-value-added” merchandise. Her analysis shows that such models were successful principially 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 Kyoto’s Nishijin dyeing and Nishijin textiles. In addition, Kyoto’s Murasachi 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 Kyoto’s Nishijin dyeing and Nishijin textile production to hand-wanted dyeing on pure silk and lavish obi shawl 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 “format 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 to identify variables related to those factors and consumer behavior. Her results show that the “value of a kimono” differs for kimono wearers (indicated by high frequency of wearing kimonos) and kimono buyers (indicated by high annual expenditure on kimonos), who purchased them for formal occasions.

Kimonos are not used simply as fashion items. She believes that Chiso, which succeeded in reaching the kimo-no 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 who 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 traders.” 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

Subjects of Research: value co-creation, marketing, entrepreneurial decision-making
Thematic Keywords: marketing, strategy

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

In 2010, the ABC conducted digital printing of Kyoto’s location and research on actual conditions of Kyoto’s kimono industry, ordered and produced hand-painted Yuzen and screen-printed kimonos, and recorded the process using video, photo, and interviews to better understand and record the current Kyoto kimono situation (see SCD2014/4-1).

The Potential for New Kimono Businesses in Kyoto

Revisiting the Kyoto kimono industry’s high-end/high-value-added survival strategy
Creating Bicycle-friendl y Roads

According to Ogawa, among the various means of transportation, including automobiles, railways, buses, or by foot, bicycles are said to be the fastest means of transportation. This switch from automobiles to bicycles has been accomplished by certain expectations, such as the formulation of bicycle network plans in each area to relieve traffic congestion and reduce the negative environmental impact.

Ogawa calculates the effective distance for riding bicycles in three areas—Nakagyo Ward in Kyoto City, Muke 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 3.23 km in Muke City, and 0.47 km and 2.91 km in Nakagyo Ward, 0.47 km and 3.23 km in Kusatsu City in Shiga Prefecture—and that 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.

Keiichi Ogawa
Professor, College of Science and Engineering
Ritsumeikan University

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.

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
Ritsumeikan University

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

Table

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<thead>
<tr>
<th>Mode</th>
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Chart

Relationship between distance traveled and required time

Kyoto downtown area, Kyoto city area, and suburban areas. The required transportation policies vary by region.
K
yoto 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 Wafans (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 exist-
ed for a long time, and there are many
drawings and paintings showing that public
bathhouses were popular in the Edo Peri-
od 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
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physical cleanliness was a proof of being
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since before the Second World War.

The importance of “sanitation” was
pointed out due to the development of
medicines and hygiene, and people
realized that bathing was good for pre-
venting infectious diseases and conserv-
ing 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 Relieb, the social worker Takuuya-
ki Namea talks about the necessity of
inexpensive public baths where labors,
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, sanita-
tion.

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 establish-
ment process of municipal public baths by
Kyoto and their operations after establish-
ment.

“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 Peri-
od, public baths were built for the Buraku
as a settlement of people discriminated
tower class people,” Kawabata said. She
e.xplain ed 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 bathhous-
es as a financial resource for the Buraku in
order to relieve people suffering from
their poverty-stricken lives.

“According to Kawabata, who thor-
oughly examined documents such as the
Buraku history in Kyoto and the Hinode
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acquisition of infrastructure, such as that
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Buraku history and municipal government
are not been maintained. The establishment
of municipal public baths also led to the
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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, includ-
ing the Public Bath Movements around the
world and the national characteristics of
the Japanese people.

Public Bath Movement
that influenced Sentos of Japan

"Later, among the municipal public
baths that were built one after another
in Kyoto City, some were equipped with
meeting places and vocational training fa-
cilities 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 inade-
quate water supplies, and water pipes had
not been maintained. The establishment
of municipal public baths also led to the
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The Unknown History of
Buraku in Kyoto
from the Perspective of
Public Bathhouses

In his book Visit to the West - the Poor
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world and the national characteristics of
the Japanese people.
What are the Policies for Preserving 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 destroyed during the Second World War, and the city's residents have 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 for empty buildings, but in Kyoto City, the “Ordinance on Preservation and Utilization of Historical Buildings in Kyoto City,” which stipulates 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 Machiya houses, another world which can be found at the back of cul-de-sac streets.

For example, there is a study that details the supply situation of previously owned residential houses in Kyoto City based on the results of studies on the urban structure and living environment of the Machiya. For example, there is a study that details the supply situation of previously owned residential houses in Kyoto City based on the results of studies on the urban structure and living environment of the Machiya.

Kyo-machiya, which 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 focusing not only on Kyo-machiya but on the characteristics of the urban structure and living environment of the Kyo-machiya.

Kyo-machiya have historically been regarded as important urban structures, focusing on the importance of the parent and child's households in maintaining the city. Yoshida analyzed the geographical distribution of Kyo-machiya focusing not only on Kyo-machiya but also on the location, specifications, and price of all detached houses, including side detached houses and apartment buildings. He brought to light the price differences, as well as tendencies in total floor area and number of rooms across the city. He investigated the market conditions of various residential buildings, from Kyo-machiya that are considered to have 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. Kyo-machiya are generally located deep in the sites of the so-called “cul-de-sac,” 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 the new 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, or dead-end 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. 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 lower, there are a number of locations that are considered Kyo-machiya but not being sold.” The cases where even if allowed through rebuilding is not, these buildings are being renovated as housing. However, it is possible to enter the market in another way.

Currently, Kyo-machiya are hot in the previously owned residential housing market. "the building must be in contact with a road by two (or) three meters or more. Therefore, rebuilding is prohibited. 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 lower, there are a number of locations that are considered Kyo-machiya but not being sold.” The cases where even if allowed through rebuilding is not, these buildings are being renovated as housing. However, it is possible to enter the market in another way.

The 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.
Recently, a large cache of 35-mm film was discovered in a second-hand bookstore. They contained a scenario 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 nerimono. 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 on the spatial culture of Kyoto in literary works or drawings, which are similar to their conventional form. A concept introduced to create themes based on the months of the year from January to December using the historical investigations of Kamo Yoshikawa, who was a historian of manners and customs. Based on that, geiko and maiko 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 First Nerimono in 1960, and the photograph depicts geiko who had dressed up to match the themes of each of the months, such as Momoi no Sieku (Peach Festival), also known as Hinamatari (doll’s festival) for March and Gojo-bashi no Tsui (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.”

Kato also studies Neruyo-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 Neruyo-Yuka is an event that occurs from May to 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 Neruyo-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 Ritoku Aikawa (1780), the picture of people enjoying the cool evening beside the Shijo-Kawara Yusuzu no Tsui (Enjoying the Cool of Evening at Shijo Gawara). Also, in Miyako Rinsen Meisho Zu-e (Guide to Famous Garden 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.” According to Kato, when the period changed from Meiji to Taisho, the tradition of enjoying the cool of evenings on the dry 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 local 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 Gawaeru Yusuzu– mi (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.
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 elegant culture of the Heian Period, over one thousand years ago.” However, in reality, Kyoto has been 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 (Mururasaki Shi-kibu) 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 “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 sound of the waterfall” (The wind is blowing down the depth of the hills carrying the sound of the sutras. This awakens me from the earth 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 Kogetsu in the volume 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 Hatsu Saburo 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 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 com-

The lower part of page 18 and page 19: “Kurama-dera” and “Kurama-dera Temple Guide”, from the collection of Kei Sudo. 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 encoun-
tered 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, 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
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, submerging manners and customs, religion, art, and entertainment. Its high-light is the heroic and magnificent Yama-date, which is so rooted in Kyoto.

What is so rare about the Gion Festival, as well as Yamahoko junks, 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.

Technology That Can Visualize and Reproduce the Interiors of Festival Floats

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 stages of processes in its entirety, from starting the assembly of the Yamahoko 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.

“I calculated the reference point from the coordinates of the laser measurements, 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.”

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Digitally Archiving the Space of Kyoto Across Place and Time

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. 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 Rokumon 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 Overlaid Maps of Modern Kyoto, which focuses on the Meiji Period until the end of
The things we begin to see by overlaying multiple maps of different scales and shapes onto one sheet.

Outside the Kyo capital. The achievements of Yano and others have a big impact because they are generating and providing 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, 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

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. Included in these items are folding screens and hanging scrolls, tools used in seasonal and annual events, and daily necessities.
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

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, producing the “Umbrella Effect” and lowered land temperatures.

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 geomagnetic 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.”
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

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 approach with the analytical solutions of a few simple cases.

A recent study by Yoshifumi Ogami, from Ritsumeikan University, proposes a new approach to solve the equations of fluid mechanics without the Kutta condition. The proposed panel method does not require imposing the Kutta condition for predicting lifting/vortical flow; thus, it can provide solutions for round objects without requiring computational grids around the object according to the deformation and/or attitude of the object. The proposed panel method does not require 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!"

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!"

PhD thesis score::

Doctoral dissertation score:

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 a 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 repography Levi's 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.
The special theme of this issue is on Kyoto (京). The characters for Kyoto (京) and Kyo (京) both refer to the capital (miyako). However, according to Ji-li (a unique Chinese-Japanese character dictionary by Shizuka Shizuka that provides historical and developmental roots for each listed character), Kyoto (京) reads as Kyo, which implies the term capital. In Kyoto (京), it is a dictionary of commonly used interpretations of characters by the same author as Ji-li, the following is written about the character 京 (Kyo): “An entrance in the form of an arched castle gate (京門), that has a watchtower on top. This castle gate is called Kofun (castle on the outline) on the site. There were castle gates that were used to protect the castle city, and so the term 京 (Kyo) came to mean the castle, and consequently, the word 京 (Kyō)." Furthermore, corpses (dead bodies) abandoned on the battlefields were called “京門 (Kyoju)" as a memorial (or an incantation) to keep away harm from the outside world. As an example, the term Jōjū is mentioned, which means “to go to the capital." At present, it means “to go to Tokyo." It is interesting to note that the capital goes out of the way to remain on the page. But oh what a dramatic custom! In the case of Kyoto, what corresponds to the above-mentioned Ki (kent) in the Rajom-gom gate (eventually, also Rashomon of Heian-kyo) of the name 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 and destruction of the gateman and determination of public security, the story did not involve dead bodies being embedded into the gate. To begin with, although Heian-kyo had the Rajom-gom gates, unlike the fortified cities in China, it is thought that there were no Ki (Kyoju) termis surrounding the capital city, and so the term 京 (Kyō) was used.

In Japan, Kyoto was the common name of the capital in ancient times, but eventually, during the Heian period around the 9th century, Kyoto turned into the proper name for the capital city, which included Shizuka-ya, Toba, and theUniverse land area of Heian-kyo area. In that case, the establishment of the Kyoto (京) Governor (Mayor) of the incorporation of Kyoto (by the Kamakura shogunate is regarded as an example of the establishment of an official name, i.e., National History Dictionary, Kyō area, written by Takahiro, Hayashiyuki)

The figure shown here is an infrared image captured by the author using an infrared camera that was developed as an official Kyoju. The camera can be used on a smartphone and attached to an iPhone. Although technically infrared images do not have color, the particular image is in rainbow color, with the high and low temperature differences indicated in color. Since 2003, Ritsumeikan University has organized an annual event, the Infrared Array Sensor Forum, every summer. In 2011, we invited Mr. Gabor F. Farkas from a research company in the U.S., and so, it is said that this image was captured 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 that infrared cameras for smartphones would be developed so far. 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 related reviews. However, the first reaction that I receive from most people is, “What would one use such thing for?” or “Well anybody use such 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-financed 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 educate the market with the help of other companies. Whether they will succeed in this challenge remains to be seen, however, the stance on trying to strategically transform the current condition is something that Japanese people could learn from.

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